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MARYLAND SHELL FISH COMMISSION
UNITED STATES BUREAU OF FISHERIES
UNITED STATES COAST AND GEODETIC SURVEY

SURVEY OF OYSTER BARS OF MARYLAND 1906-1912

By

CHARLES YATES

REPRESENTATIVE OF UNITED STATES COAST AND
GEODETIC SURVEY ON WORK OF
MARYLAND OYSTER SURVEY

CONTENTS

1. Summary	8. Queen Annes County
2. Anne Arundel County	9. St. Marys County
3. Baltimore County	10. Somerset County
4. Calvert County	11. Talbot County
5. Charles County	12. Wicomico County
6. Dorchester County	13. Worcester County
7. Kent County	

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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
O. H. TITTMANN, Superintendent

SUMMARY
OF
SURVEY OF OYSTER BARS
OF
MARYLAND
1906-1912

By C. C. YATES
Representative of the United States Coast and Geodetic Survey
on the work of the Maryland Oyster Survey

WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

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MAR 13 1914

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE,
COAST AND GEODETIC SURVEY,
Washington, May 23, 1913.

SIR: I have the honor to transmit herewith the final report of the officer detailed from the United States Coast and Geodetic Survey as representative of that service on the work of the Maryland Oyster Survey.

The report, together with its accompanying index chart, is designed to serve both as a summary of and as an index to the 17 technical publications and 43 oyster charts resulting from the cooperation of the Maryland Shell Fish Commission, the United States Bureau of Fisheries, and the United States Coast and Geodetic Survey in the survey of the oyster resources of Maryland.

The work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the Shell Fish Commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, 1909, 1910, 1911, 1912, and 1913.

Respectfully,

O. H. TITTMANN,
Superintendent.

To Hon. WILLIAM C. REDFIELD,
Secretary of Commerce.

CONTENTS.

	Page.
INDEX CHARTS..... precede	1
LETTER OF SUBMITTAL.....	3
INTRODUCTORY STATEMENTS.....	7
Explanation of plan of publication.....	7
Index chart as a graphical summary.....	7
Relation of the work of the Government to the Maryland Oyster Survey.....	8
MARYLAND OYSTER SURVEY.....	9
History.....	9
Object.....	9
Organization.....	10
Methods.....	11
Results.....	11
Equipment.....	13
Cost.....	13
Chronological statement.....	14
Personnel.....	14
CONCLUSIONS.....	16
General statement.....	16
Requirements of an oyster survey.....	16
Suggested organization of an oyster survey.....	17
Cost of an oyster survey.....	18
REFERENCES.....	19
TECHNICAL INDEX TO PUBLICATIONS.....	21
Explanation.....	21
Natural oyster bars—	
Alphabetical index.....	22
Numerical index.....	39
Crab bottoms—	
Alphabetical index.....	46
Numerical index.....	48
Clam beds—	
Alphabetical index.....	49
Numerical index.....	49
Landmarks (U. S. Coast and Geodetic Survey triangulation stations)—	
Alphabetical index.....	50
Numerical index.....	73

SUMMARY OF SURVEY OF OYSTERS BARS OF MARYLAND, 1906-1912.

INTRODUCTORY STATEMENTS.

EXPLANATION OF PLAN OF PUBLICATION.

It often happens that the rapid progress of modern science, even when specialized by application to a single class of work, is the indirect cause of an accumulation of technical publications impossible to assimilate and apply to a special case without an amount of labor all out of proportion to the probable benefits to be derived. And this applies with particular force to the six years' work of the Maryland Oyster Survey, as evidenced by its publications consisting of a series of 17 official documents and 43 large-scale charts aggregating over 2,400 printed pages and 400 square feet of chart area.

For reasons similar to those just mentioned, the value of a modern technical publication describing a particular work is for a greater part dependent upon the fidelity with which it is confined to a record of methods and results which can be utilized in future operations of like character. And this end has been accomplished with remarkable success for the work of the Maryland Oyster Survey by Dr. Caswell Grave of Johns Hopkins University and a member of the Maryland Shell Fish Commission from 1906 to 1912, in his Fourth Report of the Shell Fish Commission of Maryland. (*XLIII*).¹

The intent of this "Summary" is to supplement Dr. Grave's report, first, by an index chart which also serves as a graphical summary; second, by a brief explanation of the relation of the work of the Government to the Maryland Oyster Survey; third, by a summary of the essential features of the work of the Maryland Oyster Survey; fourth, by a statement of conclusions thought to be of value for use in connection with future oyster surveys; fifth, by a list of publications relating to the oyster industry of Maryland; and, sixth, by a technical index to all publications of the Government and the State directly resulting from the work of the Maryland Oyster Survey.

INDEX CHART AS A GRAPHICAL SUMMARY.

The best summary and index of the six years' work of the Maryland Oyster Survey, and probably the most useful and interesting feature of this publication, is the "Index Chart" in the folder.

The chart is self-explanatory as to details. But other considerations suggest that attention be directed to the magnitude of the shellfish resources of Maryland and to the magnitude of the actual work of the survey as indicated graphically by

¹ See "References," p. 19.

the green and red tinted areas on the water, the numerous small red triangles on the land, and the limits of the many large-scale charts required to represent these results in a practical form for future use.

RELATION OF THE WORK OF THE GOVERNMENT TO THE MARYLAND OYSTER SURVEY.

The Maryland Oyster Survey possessed the somewhat unusual character of having in its participants three separate Government bureaus and one State commission,¹ all engaged in a common work leading to the conservation and the increase of the supply of food in the form of oysters.

In priority of the Government's interest in the subject of oysters, it is so self-evident that the United States Bureau of Fisheries comes first that this phase of the subject requires no explanation. (*IX, X, XI, XII, XIII*, etc.)² And the connection of the work of the United States Bureau of Chemistry with the sanitary conditions of the oyster industry is made equally evident by the fact that it is this Bureau which administers the pure-food laws of this country. (*XXXV*.)² But the relation of the United States Coast and Geodetic Survey to such work is not so easy to explain. (*XXXIV*.)²

The United States Coast and Geodetic Survey includes among its many functions not only the supplying of the chart-making needs of navigation, but also the laying of the geodetic foundation for a large part of the geographic work of our country; and it naturally follows that this foundation part of an "oyster survey" should be laid by the institution normally performing this class of work. Just as in a similar sense, it is better and more economical to have the foundation of a building laid by those experienced in such work, even though in the end it is the superstructure erected on the foundation which is utilized and appreciated by the public.

Or stated in another way, it is only a question of the practical connection between the work of the United States Coast and Geodetic Survey in surveying and charting the waters of the coasts for the purposes of navigation, and the work of a so-called "oyster survey" in surveying and charting the oyster bottoms of these same waters of these same coasts for the purpose of developing the oyster industry of our country.

¹ U. S. Bureau of Fisheries, U. S. Coast and Geodetic Survey, U. S. Bureau of Chemistry, and Maryland Shell Fish Commission.

² See "References," p. 19.

Diagram Showing the History of Oyster Production and Oyster Legislation in Maryland.

MARYLAND OYSTER SURVEY.

HISTORY.

A summary view of the history of the oyster industry of Maryland is graphically represented by the diagram by Grave, which faces this page. (XXXVI.)¹

Another summary view of the same subject is presented by the chronological table of publications under the head of "References,"¹ which were selected and arranged partly for that purpose.

The diagram and the table of publications, while being in most respects a sufficient historical statement for the purposes of this publication, do not do justice to the many whose unselfish activities for the benefit of the oyster industry of Maryland have not followed the line of public work leading to a corresponding amount of printed records. And although these public-spirited citizens and officials are hundreds in number, there stands out at the head of this line of achievement, as do Brooks (V)¹ and Winslow (II)¹ along their respective lines, the author² of the Haman Oyster Culture Law (XLIII, pp. 353-372)¹ who has most splendidly and persistently led the movement which has molded the history of oyster culture in Maryland for more than twenty years down to the present time. (VII.)¹

OBJECT.

The immediate object of the Maryland Oyster Survey, as distinguished from the hopes of the ultimate benefits to be derived from that work, having been transformed into actual results, it is needless to emphasize this phase of the subject beyond referring to the statistical statements under the head of "Results" and to the graphic representation of these same facts on the "Index Chart."

But the ultimate object of the survey is another matter, and deals more nearly with what the pioneers of the oyster-culture movement in Maryland believed, and now have still more reason to believe, will be the form of the great oyster industry they expect to see erected on the foundation which has been laid for that purpose. (VII.)¹

It now seems not only reasonable but probable that within the next generation the citizens of Maryland will be leasing and cultivating a probable 100,000 and a possible 300,000 acres³ of so-called "barren bottoms" where oysters do not now grow in commercial quantities; that the more than 200,000 acres of natural oyster bars now reserved for the use of the oystermen as a result of the Maryland Oyster Survey will be so conserved and developed that they will produce, as they have done before, twice the amount they now yield; that the oyster industry of Maryland will then be based on an annual production of 20,000,000 bushels of oysters where now it is

¹ See "References," p. 19.

² B. Howard Haman, of Baltimore, Md.

³ At the present date, May 23, 1913, some 36,000 acres have been applied for or leased.

barely 5,000,000; and that the physical valuation of the State-owned oyster lands will then be \$100,000,000, where now it is not more than \$20,000,000. (*XXIV*, p. 208; *XLII*, pp. 35-46; *XLV*.)¹

These are the large expectations that measured, and do still measure, the ultimate object of the Haman Oyster Culture Law, and which led to the building of the Maryland Oyster Survey in such a manner that it will serve as a foundation for even a greater development of the oyster industry of Maryland than was forecasted by its founders.

ORGANIZATION.

The organization of the Maryland Oyster Survey has been indicated in the "Introductory statements" and in the "Conclusions." It is also described in detail in the publications of the Maryland Shell Fish Commission (*XLIII*, pp. 11-25)¹ and the United States Coast and Geodetic Survey (*XLIV*, pp. 19-21, 248-250).¹

In a general way it is sufficient to state that the greater bulk of the work of this particular oyster survey was divided between the Maryland Shell Fish Commission² and the United States Coast and Geodetic Survey in accordance with the laws (*XLIV*, pp. 243-246)¹ authorizing the work and the natural division of the surveying operations of the cooperating forces.

The work of the Maryland Shell Fish Commission included all the oyster investigations, the special hydrographic operations required to delimitate the various shellfish bottoms, the surveying of the leased oyster lots, and all administrative matters pertaining to Maryland. The work of the United States Coast and Geodetic Survey included the establishing of the surveying foundation of triangulation, hydrography and topography, the preparation and publication of the technical and legal descriptions of the boundaries of the various shellfish bottoms reserved for the use of the public, and the preparation and publication of all the oyster charts showing the results of the work of the Maryland Oyster Survey.

Dr. H. F. Moore, the well-known scientist of the United States Bureau of Fisheries and representative of that bureau on the work of the Maryland Oyster Survey, has stated that "the Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose." To which should be added in the way of explanation, that the part of the survey normally coming under the jurisdiction of the United States Bureau of Fisheries was in this case carried on by the State under the supervision of Dr. Caswell Grave, the scientific member of the Maryland Shell Fish Commission. If it had not been for this fortunate circumstance, to again quote Dr. Moore, "this work would have been conducted by the Bureau of Fisheries acting independently, as has been the case in certain other States than Maryland, the same ends being attained at greater expense to the Government." (*XLIV*, p. 20.)¹

It should be stated also that the sanitary survey of the oyster-producing waters of Maryland by the United States Bureau of Chemistry was not carried on with the advantage of the same degree of cooperation as probably would have been the case if the character of this feature of the work could have been more nearly forecasted at the beginning. (*XXXV*.)¹

¹ See "References," p. 19.

² See "Personnel," p. 14.

METHODS.

The methods employed on the work of the Maryland Oyster Survey being indicated in outline in the "Conclusions" and also explained in detail in the publications of the Maryland Shell Fish Commission (*XLIII*, pp. 48-95)¹ and the United States Coast and Geodetic Survey (*XLIV*, pp. 248-249, 172-177, 33-36, 20-21),¹ it is not in harmony with the plan of this publication to repeat that information here.

But there is one point in the methods not adequately explained elsewhere in the publications of the Maryland Oyster Survey which it is believed should be emphasized. And that point relates to the advantages of the use of geographic coordinates in technically and legally defining boundaries of natural oyster bars and leased oyster bottoms.

This method of defining property lines under water was also used in the survey of the leased oyster bottoms of Delaware, and outlined in the following extract from the report of that work (*XLVIII*, pp. 69-74):¹

The difficulties of accurately locating and permanently defining the boundaries of a farmer's plantation on land, even with the aid of monuments, public roads, streams of water, and other points of reference, are often great, judging from the disputes arising from this source. But be that as it may, there can be no doubt as to the difficulties of accurately locating and permanently defining the boundaries of an oysterman's plantation situated under water at a distance off shore from 1 to 6 miles, as is the case with the leased oyster bottoms of Delaware. (*XLVIII*, map.)¹

There is only one point on the earth's surface at the intersection of any one parallel of latitude and any one meridian of longitude, and therefore, there can be no dispute as to the meaning of such a geographic definition of the location of a point, even though all the original triangulation station marks used in its determination, together with the chart on which its position was originally plotted, have been totally destroyed.

In the case of the destruction of an original triangulation station mark, or any other point defined by a geographic position, a competent geodetic engineer can reestablish its exact location by means of a new system of triangulation connecting with other distant triangulation station marks which have not been destroyed. In the case of the destruction of the chart on which the position of any such point on the earth's surface was originally plotted, this point can be replotted by its geographic position with any degree of accuracy permitted by the scale of any new chart constructed for that purpose.

If there be no question at the time of the original location and legal adoption of a geographic definition of the location of a point by a given latitude and longitude, there can be no technical or legal question afterwards as to its exact meaning, or as to the exact redetermination of the location of this point, be it either on land or water at its newly determined position, or on a new chart in its newly plotted position.

For these reasons, the method of defining the location of boundary points by latitudes and longitudes (geographic positions) was adopted in the survey of the leased oyster bottoms of Delaware. This method is more or less an innovation in oyster surveys which was first used in connection with the work of the Maryland Oyster Survey. It possesses so many undoubted advantages, and at the same time is so simple in principle and application when once understood, that its adoption by other oyster surveys of other States than Maryland and Delaware seems probable.

RESULTS.

The results of the Maryland Oyster Survey are presented in many forms and in many places throughout the publications of that survey.

Graphically, they are represented on a large scale on the Maryland Oyster Charts, Nos. 1 to 42. (*LIV*.)¹ On a medium-sized scale, they are partly shown on

¹ See "References," p. 19.

the "Progress maps" in the series of the 12 county publications of Survey of Oyster Bars of Maryland.¹ On a much smaller scale they are represented as a whole on the "Index Chart" in the folder of this publication.

Statistically, the results are also described in various tables both in the publications of the Maryland Shell Fish Commission (*XLIII*, pp. 39-47, 102-103, 114-117, 126-127, 132, 145-149, 182-183, 189, 195-199, 206-210, 225-228, 239-241, 246, 321-322, 336-339)¹ and the United States Coast and Geodetic Survey (*XVIII*, pp. 18-19; *XX*, p. 15; *XXII*, p. 16; *XXVI*, p. 16; *XXVIII*, pp. 22-23; *XXX*, p. 14; *XXXII*, p. 14; *XXXIX*, p. 18; *XL*, p. 21; *XLIV*, p. 25; *XLVI*, pp. 23, 180).¹ But as these tables are too separated for the purposes of a summary view, their principle features will be given in groups of statistics arranged in accordance with the class of the results it is desired to present.

STATISTICS OF RESULTS PERTAINING TO SHELLFISH BOTTOMS RESERVED FOR PUBLIC USE.

	Acres.
Natural oyster bars surveyed, technically defined, and reserved for the use of the public.....	215,845
Crab bottoms surveyed, technically defined, and reserved for the use of the public.....	43,991
Clam beds surveyed, technically defined, and reserved for the use of the public.....	506

STATISTICS OF RESULTS PERTAINING TO OYSTER BOTTOMS SUITABLE FOR OYSTER CULTURE.

	Acres.
Undeveloped, but known productive oyster culture bottoms owned by the State and subject to lease under the terms of the Haman Oyster Culture Law.....	100,000
Undeveloped, but estimated as being potentially productive oyster culture bottoms owned by the State and subject to lease under the terms of the Haman Oyster Culture Law.....	200,000
"Barren bottoms" of doubtful value for the growth of oysters, although in waters sufficiently salt for the purpose and subject to lease under the terms of the Haman Oyster Culture Law.....	460,000

STATISTICS OF RESULTS PERTAINING TO SURVEYING DATA USEFUL FOR SURVEY OPERATIONS OTHER THAN OYSTER SURVEYS.

Triangulation stations based on the standard datum of the United States Coast and Geodetic Survey.....	1,112
Miles of shore line covered by triangulation.....	1,340
Square miles of water covered by triangulation.....	1,600
Square miles of land controlled by triangulation.....	1,200
Miles of soundings ²	3,060
Soundings ²	159,530
Square miles of water covered by soundings ²	480
Tide stations established ²	30

OTHER STATISTICS OF FIELD WORK INDICATING THE STANDARD OF THE SURVEYING OPERATIONS ON WHICH THE RESULTS ARE BASED.

Oyster investigation stations occupied for examination of bottoms and other data.....	11,006
Miles of examination of shell bottoms with chain apparatus.....	3,060
Triangulation stations occupied.....	1,050
Boundary buoys located and anchored.....	2,964
Monuments planted to mark triangulation stations.....	1,000
Sextant angles observed on sounding lines.....	62,600

¹ See "References," p. 19.

² This part of the work was done under the immediate direction of Swenson Earle, Hydrographic Engineer of the Maryland Shell Fish Commission.

STATISTICS OF OFFICE WORK INDICATING CHARACTER OF RESULTS.

Hydrographic positions plotted.....	8,600
Large-scale projections prepared, showing legal boundaries of shellfish bottoms.....	87
Geographic positions of triangulation stations computed.....	1,100
Large-scale leasing charts prepared.....	63
Triangles computed.....	2,500
Description of triangulation stations prepared for publication.....	1,112
Back azimuths and distances from corners of boundaries to triangulation stations computed.....	10,000

STATISTICS OF PUBLICATIONS INDICATING QUANTITY OF WORK.

Reports of Maryland Shell Fish Commission.....	4
Printed pages in Maryland Shell Fish Commission reports.....	900
Publications of the United States Coast and Geodetic Survey.....	13
Printed pages in the United States Coast and Geodetic Survey publications.....	1,560
Progress maps in United States Coast and Geodetic Survey publications.....	12
Oyster charts showing boundaries of shellfish bottoms published by United States Coast and Geodetic Survey.....	43

EQUIPMENT.

The equipment for the work of the Maryland Oyster Survey is fully described in the publications of the Maryland Shell Fish Commission (*XLIII*, pp. 34-36)¹ and the United States Coast and Geodetic Survey (*XVI*, pp. 102-104).¹

In a general way it may be stated that the equipment was ample and satisfactory, especially in respect to the large living and office quarters on the Maryland Shell Fish Commission houseboat *Oyster* (*XLIII*, p. 35)¹ and the equipment of instruments furnished by the United States Coast and Geodetic Survey for both the work of the Government and State.

COST.

On account of the divided administration that naturally goes along with cooperative work of several independent institutions, the problem of fixing the cost of the six years' work of the Maryland Oyster Survey presents many difficulties. But Dr. Grave in the "Fourth Report of the Shell Fish Commission of Maryland" (*XLIII*, p. 33)¹ has placed the figure at something more than a total of \$200,000 for all the work of both the Government and the State.

Accepting \$200,000 as the cost of the Maryland Oyster Survey, the following deductions will be of interest:

The total area of the tidewaters of Maryland covered by the Maryland Oyster Survey, including natural oyster bars, crab bottoms, clam beds, bottoms suitable for oyster culture, and all other bottoms interspaced between these shellfish areas, is approximately 1,600 square miles, or 1,020,000 acres. This makes the cost of surveying and charting this area approximately \$125 a square mile, or 20 cents an acre.

The total annual production of oysters in Maryland is now approximately 5,000,000 bushels, and the estimated ultimate production is 20,000,000 bushels. This makes a total cost of 1 cent per bushel for the estimated ultimate annual yield of the oyster industry to be operated on the surveying basis established by the

¹ See "References," p. 19.

Maryland Oyster Survey, or $1\frac{1}{2}$ cents per bushel for the predicted 15,000,000-bushel increase in annual production.

The total physical valuation of the oyster industry of Maryland is estimated as being now approximately \$20,000,000, and the predicted ultimate valuation has been placed at \$100,000,000. This makes the cost of the Maryland Oyster Survey one-fifth of 1 per cent of the predicted ultimate value of the oyster industry to be based on that work, or one-quarter of 1 per cent of the predicted increase in valuation. (*XLIII, XLV.*)¹

CHRONOLOGICAL STATEMENT.

The chronological account of the six years' work of the Maryland Oyster Survey occupies many pages of both the publications of the Maryland Shell Fish Commission (*XLIII*, pp. 9-24, 37-38)¹ and the United States Coast and Geodetic Survey (*XVI*, pp. 104-105; *XVIII*, pp. 17-18; *XX*, pp. 14-15; *XXII*, p. 15; *XXVI*, pp. 15-16; *XXVIII*, pp. 21-22; *XXX*, pp. 13-14; *XXXII*, p. 13; *XXXIX*, pp. 17-18; *XL*, pp. 19-20; *XLIV*, pp. 23-25; *XLVI*, pp. 22-23).¹ For the purposes of this publication it is thought that it will be sufficient to give a table of the dates of the beginning of the field work and the closing of the office work for each county. The dates of the close of office work also being the dates of the filing of the certified charts and reports marking the legal opening of each county for the purpose of oyster culture under the provisions of the Haman Oyster Culture Law.

County	Beginning of field work	Close of office work and date of filing of certified charts and reports
Anne Arundel	June 29, 1906	June 20, 1907
Somerset	May 2, 1907	July 1, 1908
Wicomico	Aug. 27, 1907	Dec. 1, 1908
Worcester	Nov. 8, 1907	Apr. 12, 1909
Calvert	May 2, 1908	Dec. 14, 1909
Charles	Aug. 13, 1908	Jan. 27, 1911
St. Marys	May 2, 1908	July 6, 1911
Baltimore	Apr. 14, 1909	Aug. 10, 1911
Kent	Apr. 14, 1909	Oct. 5, 1911
Queen Annes	Apr. 14, 1909	Nov. 29, 1911
Talbot	July 6, 1909	July 20, 1912
Dorchester	Mar. 14, 1910	Aug. 17, 1912

PERSONNEL (1906-1912)

The following list of those directly connected with the work of the Maryland Oyster Survey, either as executives or technical experts, is given for purposes of reference only. So much could be said that is fine and true of the character and spirit of the work of many who were directly and indirectly connected with the six years' operations of the Maryland Oyster Survey, and the desire to say it is so great, that under the circumstances the only practical course in a summary publication of this sort is to omit all such comments. (*XLIV*, pp. 25-26; *XLIII*, pp. 11-25; *XXXIV*, p. 13.)¹

¹ See "References," p. 19.

STATE OF MARYLAND.

Maryland Shell Fish Commission.

Commissioners.

WALTER J. MITCHELL (1906-1912).
CASWELL GRAVE (1906-1912).
BENJAMIN K. GREEN (1906-1912).

Chief Engineer.

SWEPSON EARLE (1906-1912).

Assistant Engineers.

W. GIBSON EMORY (1906-1908).
ERNEST REPPENHAGEN (1907-1909).
T. H. GRAVE (1907-1911).
H. A. MARSTON (1908-1910).
H. E. COLLINS (1910).
HUGH MITCHELL (1909-1912).

U. S. DEPARTMENT OF COMMERCE.

U. S. BUREAU OF FISHERIES.

Representative of Bureau,

H. F. MOORE (1906-1912).

U. S. COAST AND GEODETIC SURVEY.

Representative of Survey.

C. C. YATES (1906-1912).

Assistant Engineers.

FRANK W. SETH (1906-1912).
E. A. BORST (1906, 1907, 1909).
N. L. ARBUCKLE (1906-1910).
PAUL C. WHITNEY (1907).
J. J. PHELAN (1907-1910).
TEMPLETON VAN DE BOGERT
(1911, 1912).
T. H. GRAVE (1911).

Draftsmen.

JOHN D. TORREY (1906-1911).
G. C. MOORE (1906-1911).
R. L. ROSS (1911-1912).
T. J. STOCKTON (1911).
GEORGE W. MYERS (1911).

Special Drafting Work.

DAVID M. HILDRETH.
C. R. THOMPSON.
ROBERT F. STORM.
J. C. MULFORD.

CONCLUSIONS.

GENERAL STATEMENT.

The Maryland Oyster Survey is probably the most extensive and complete work of its kind. And for that reason many of the conclusions resulting from experience gained in that work might be of public interest. But in harmony with the plan of this publication only those will be given which are thought to be of special value for use in connection with the consideration of future surveys of similar character.

The primary object of an oyster survey from a national point of view is to conserve and increase the national supply of food. And before this can be done intelligently and economically it is evident that an inventory (or a survey as it is more commonly called) of the oyster resources under investigation must be made and recorded on charts and in other forms. (*XXIII, LIV.*)¹

As distinguished from a national point of view, the object of an oyster survey of a particular State or locality naturally partakes more of the character of a desire to develop the wealth of that State or locality by increasing its oyster industries or by revenues obtained from the leasing of the land underneath its oyster-producing waters. And like the Government, it is evident that a State can not accomplish these objects intelligently and economically without first having a survey made of its oyster resources. (*XLIII, XLVIII.*)¹

Considered from both these points of view, the cooperation of the General Government with a State government appears to be not only a legitimate and an economical arrangement, but also the best method of conducting an oyster survey.

REQUIREMENTS OF AN OYSTER SURVEY.

From the Government standpoint, the chief requirements of an oyster survey appear to be:

First. The representation on charts of the bottoms of the oyster-producing waters in such a manner as to show not only the limits of the natural growth of oysters as to locality and quantity, but also such other related information about these areas and the contiguous bottoms as will best indicate their value for the purpose of oyster culture. (*XXIII, XLIX, LIV.*)¹

Second. A more detail description of the oyster bottoms than can be shown by symbols on the charts, and such other information as to the saltness of the water, the quantity and quality of the oyster food in the water, currents, tides, surrounding sanitary conditions, character of bottom, etc., as affect the growth and value of oysters. (*X, XXXV, XLI, XLIX.*)¹

Third. The carrying on of the oyster survey in such a manner that whenever it is economical to do so the results of certain parts of the surveying operations made necessary by the requirements of the oyster survey can be utilized as a geographic

¹ See "References," p. 19.

foundation for chart-making surveys, mapping of the adjacent land regions, river and harbor improvements, etc. (XXXIV; XLIV, pp. 36-171; XLVIII, pp. 59-68.)¹

From the State or local standpoint the desirable requirements of an oyster survey, in addition to those just stated, appear to be:

First. The well-defined representation on published charts, in a more or less arbitrary form, of the so-called "natural oyster bars" which are to be reserved for the use of the public by reason of ancient customs, public sentiment, or the laws of the State in which they are located. (LIV.)¹ And a similar well-defined representation on published charts of the boundaries of the bottoms leased from the State by private individuals for the purpose of oyster culture. (XLVIII, map.)¹

Second. A more detail, technical, and legal description of the boundaries of these public natural oyster bars (XLIV, pp. 172-242)¹ and private leased oyster bottoms (XLVIII, pp. 69-108)¹ than can be secured by their representation on the charts, in order that the State can furnish an easily defined and incontestible title to those oyster bottoms it may desire to lease for the purposes of revenue or for the encouragement of oyster culture.

Third. The representation of the information obtained by the oyster survey in such a manner, both on charts and in publications, as will best combat the obstacles due to ignorance, prejudice, and politics, which are always to be found, to a greater or less extent, in every locality where oyster culture is in progress or being contemplated. (VII, XXIX, XXXIV, XXXVI, XXXVII, XXXVIII, XLI, XLII, XLV, LIII.)¹

SUGGESTED ORGANIZATION OF AN OYSTER SURVEY.

A complete oyster survey includes a part of the normal scientific operations of three separate bureaus² of the General Government, and for that reason, as has been previously indicated, an ideal survey of the oyster resources of any one State would involve the cooperation of these three Government bureaus with a State commission especially created for that purpose. (XXXIV.)¹

Arranged in the order of actual operations, and without reference to priority or magnitude of the interests involved, the distribution of the work of the suggested cooperative oyster survey would be as follows:

United States Coast and Geodetic Survey.—The establishment of a surveying foundation of triangulation, topography, and hydrography.

United States Bureau of Fisheries.—The delimitation of the boundaries of the various classes of oyster bottoms and other scientific operations pertaining particularly to oysters.

United States Bureau of Chemistry.—The sanitary survey of the oyster-producing waters.

State Oyster Survey Commission.—The marking, defining, and charting of the boundaries of both public and leased oyster bottoms, and the consideration of matters relating to the economic development of the oyster industry to be based on the results of the oyster survey.

¹ See "References," p. 19.
95112-13—2

² Bureau of Fisheries, Coast and Geodetic Survey, and Bureau of Chemistry.

COST OF AN OYSTER SURVEY.

There is no one thing more important to either the layman or the engineer than to be able to make some sort of an estimate of the final cost of any engineering work being considered. And while the cost of any such work as the survey of the vast oyster resources of Maryland is information which should be recorded, it is of value chiefly for the means it furnishes for estimating the cost of future engineering works of similar character.

Adopting the figures of Dr. Caswell Grave,¹ the cost of a new oyster survey based on results obtained by the Maryland Oyster Survey would be approximately 20 cents an acre for the entire area to be covered without reference to the various bottoms as finally classified. The legitimate share of the State's expenses being estimated at 11 cents and those of the Government at 9 cents an acre.

In considering the cost of an oyster survey, it should not be forgotten that the benefit to be derived by the Government from such operations would be not only in the form of an increase in the food supply of the country, but also in the form of a surveying foundation suitable for other chart and map making operations, river and harbor improvements, and so forth.

In further explanation it should be stated that all the uncertain elements of weather, season, character of the topography, refinement of results demanded, urgency for completion of work, and so forth, which make it so difficult to estimate the cost of a geographic survey on land, are further magnified in an oyster survey. Not only by waves produced by winds that would not deter work on land, but also by social and political conditions which are usually associated with such work.

It is also well to state in the way of warning that the preceding cost data when used as a basis for estimating the cost of oyster surveys in other States than Maryland may give only an approximately correct estimate under certain conditions. That for large open bodies of water, it might give an overestimate for good weather and an underestimate for bad weather, while for small bodies of water with complicated shore line and numerous small scattered oyster areas, it would probably furnish an underestimate because of the increased detail of the work in proportion to the total area of the survey.

¹ See p. 13.

REFERENCES.

NOTE.—This list of publications was prepared solely for the purpose of furnishing such references as best suit the plan of this publication, and it should not be considered as being complete in any other sense.

Reference number.	Date.	Title.	Author or editor.	Publisher.*	Pages, etc.
I	1880	Report of the Commissioners of Fisheries of Maryland.	T. B. Ferguson, Thos. Hughlett, Wm. K. Brooks, Francis Winslow.	Commission of Fisheries of Maryland.	347; illus.
II	1881	Report on the oyster beds of the James River, Va., and of Tangier and Pocomoke Sounds, Md. and Va.	Francis Winslow.....	U. S. Coast and Geodetic Survey.	87; maps; illus.
III	1881	Report of Commissioner of Fisheries of Maryland.	T. B. Ferguson, John A. Ryder, Francis Winslow.	Commission of Fisheries of Maryland.	158; illus.
IV	1881	The oyster industry.....	Ernest Ingersol.....	Bureau of Census.....	251; illus.
V	1884	The development and protection of the oyster in Maryland.	Wm. K. Brooks.....	Johns Hopkins University.	193; maps; illus.
VI	1891	The oyster.....	do.....	do.....	230; illus.
VII	1893	Oysters and roads.....	B. Howard Haman.....	Maryland Road League.	44.
VIII	1893	Oyster records. Distances and bearings of numbered corners of public grounds, etc., of the State of Virginia.	J. B. Baylor.....	Virginia Fish Commission.	Pamphlet for each county.
IX	1895	The oyster industry of Maryland.....	Charles H. Stevenson.	U. S. Bureau of Fisheries.	110; illus.
X	1897	Oysters and methods of oyster culture with notes on clam culture.	H. F. Moore.....	do.....	78; illus.
XI	1899	Report on the oyster beds of Louisiana.....	do.....	do.....	55; illus.
XII	1904	Investigations for the promotion of the oyster industry of North Carolina.	Caswell Grave.....	do.....	95; map; illus.
XIII	1905	The crab industry of Maryland.....	Winthrop A. Roberts.	do.....	18.
XIV	1907	First report of the Shell Fish Commission of Maryland.	Caswell Grave.....	Maryland Shell Fish Commission.	231; illus.
XV	1907	Survey of oyster bottoms in Matagorda Bay, Tex.	H. F. Moore.....	U. S. Bureau of Fisheries.	86; map; illus.
XVI	1907	Survey of oyster bars, Anne Arundel County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	106; map.
XVII	1908	Fisheries of the United States.....	Bureau of Census.....	Bureau of Census.....	324.
XVIII	1908	Survey of oyster bars, Somerset County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	118; map.
XIX	1909	Second report of the Shell Fish Commission of Maryland.	Caswell Grave.....	Maryland Shell Fish Commission.	149; illus.
XX	1909	Survey of oyster bars, Wicomico County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	54; map.
XXI	1909	Oyster supply of Maryland.....	Caswell Grave.....	Conservation Commission of Maryland.	13; illus.
XXII	1909	Survey of oyster bars, Worcester County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	67; map.
XXIII	1910	Condition and extent of the oyster beds of James River, Va.	H. F. Moore.....	U. S. Bureau of Fisheries.	83; map.
XXIV	1910	Shell-fish industries.....	James L. Kellogg.....	Henry Holt & Co.....	361; illus.
XXV	1910	Oyster-culture experiments and investigations in Louisiana.	H. F. Moore, T. E. B. Pope.	U. S. Bureau of Fisheries.	54.
XXVI	1910	Survey of oyster bars, Calvert County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	94; map.
XXVII	1911	Condition and extent of the natural oyster beds of Delaware.	H. F. Moore.....	U. S. Bureau of Fisheries.	29; map.

References—Continued.

Reference number.	Date.	Title.	Author or editor.	Publisher.	Pages, etc.
XXVIII	1911	Survey of oyster bars, St. Marys County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	203; map.
XXIX	1911	Proposed amendments to the Haman Oyster Culture Law.	Maryland Shell Fish Commission.	Maryland Shell Fish Commission.	16.
XXX	1911	Survey of oyster bars, Charles County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	62; map.
XXXI	1911	Third report of the Shell Fish Commission of Maryland.	Caswell Grave.....	Maryland Shell Fish Commission.	133; illus.
XXXII	1911	Survey of oyster bars, Baltimore County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	42; map.
XXXIII	1911	Report of proceedings of the third annual Convention of the National Association of Shellfish Commissioners.	Swepson Earle.....	National Association of Shellfish Commissioners.	98; illus.
XXXIV	1911	The relation of the work of the U. S. Coast and Geodetic Survey to State Oyster Surveys.	C. C. Yates.....		13.
XXXV	1911	Shellfish contamination from sewage-polluted waters and from other sources.	George Whitfield Stiles, Jr.	U. S. Bureau of Chemistry.	53; illus.
XXXVI	1912	History of oyster production in Maryland, 1810-1912.	Caswell Grave.....		11.
XXXVII	1912	Analysis of the Campbell Oyster Bill..	C. C. Yates.....	Maryland Shell Fish Commission.	23.
XXXVIII	1912	What the crab industry is worth to Maryland.	Swepson Earle.....		7.
XXXIX	1912	Survey of oyster bars, Kent County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	130; map.
XL	1912	Survey of oyster bars, Queen Annes County, Md.	do.....	do.....	176; map.
XLI	1912	A manual of oyster culture of Maryland.	Caswell Grave.....		75; illus.
XLII	1912	Discussion of the Campbell Oyster Culture Bill as amended by the Price Oyster Plan providing for conservation of natural oyster bars along with oyster culture on barren bottoms.	C. C. Yates.....	Maryland Shell Fish Commission.	53.
XLIII	1912	Fourth report of the Shell Fish Commission of Maryland.	Caswell Grave.....	do.....	376; illus.
XLIV	1912	Survey of oyster bars, Talbot County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	250; map.
XLV	1912	Notes on the history of the oyster in Maryland and the physical valuation of her oyster properties.	Caswell Grave.....	Maryland Shell Fish Commission.	11; map.
XLVI	1912	Survey of oyster bars, Dorchester County, Md.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	180; map.
XLVII	1913	Fish and oyster law of the State of Maryland.	V. Calvin Trice.....	State Fishery Force...	154.
XLVIII	1913	Report of Delaware Oyster Survey Commission 1909-1912.	C. C. Yates.....	Delaware Oyster Survey Commission.	108; map.
XLIX	1913	Condition and extent of the natural oyster beds and barren bottoms of Mississippi Sound, Ala.	H. F. Moore.....	U. S. Bureau of Fisheries.	61; map.
L	1913	Condition and extent of the natural oyster beds and barren bottoms of Mississippi, east of Biloxi.	do.....	do.....	41 illus.
LI	1913	Oyster industry of Maryland and Virginia, 1912.	U. S. Bureau of Fisheries.	do.....	Large sheet of statistics.
LII	1913	Fifth report of the Shell Fish Commission of Maryland.	William H. Maltbie...	Maryland Shell Fish Commission.	12.
LIII	1913	Oysters: The World's most valuable water crop. (National Geographic Magazine, March, 1913.)	Hugh M. Smith.....	National Geographic Society.	26; illus.
LIV	1906 to 1913	Maryland Oyster Charts showing result of survey by Maryland Shell Fish Commission, U. S. Bureau of Fisheries, and U. S. Coast and Geodetic Survey Charts Nos. 1 to 42 and Index Chart.	C. C. Yates.....	U. S. Coast and Geodetic Survey.	42 charts, scale 1:20,000, each 30 by 40 inches.

TECHNICAL INDEX TO PUBLICATIONS.

EXPLANATION.

The technical index to the publications of the Maryland Oyster Survey is divided into four sections of two parts each under the heads of "Natural oyster bars," "Crab bottoms," "Clam beds" and "Landmarks (U. S. Coast and Geodetic Survey triangulation stations)."

The *first part* of each section is an "Alphabetical index," which gives for each natural oyster bar, crab bottom, clam bed, or triangulation station, as the case may be—

1. The serial number of the Maryland oyster chart on which it is shown.
2. The approximate geographic location in latitude and longitude.
3. The county in which it is located.
4. The "County index number" by which it is indicated on the "Index chart."¹
5. The page number of the United States Coast and Geodetic Survey county publication of "Survey of oyster bars" on which it is technically described as to boundaries and locations.
6. The page number of the Fourth Report of the Shell Fish Commission, on which are described its characteristics pertaining particularly to oysters.

The *second part* of each section is a "Numerical index" arranged in a separate division for each county within which "Natural oyster bars," "Crab bottoms," "Clam beds," or "Triangulation stations" are located, and gives only the names of the bars, bottoms, beds, or stations, as the case may be, corresponding to the "County index number" of these same objects as shown on the "Index chart."

The "County index numbers" are arranged in numerical order on the "Index chart," commencing with No. 1 for each county, and in using an index number obtained from the "Index chart" it should be coupled with the name of the county in which it is located. The names of the different counties are given in large red letters on the "Index chart" and their boundaries are shown by red dash and dot lines.

¹ See chart in folder of this publication.

NATURAL OYSTER BARS.

ALPHABETICAL INDEX.

NOTE.—See Numerical Index for names of natural oyster bars corresponding to numbers on Index Chart.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located.	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Abell	25	38 17	76 43	St. Marys	95	184	148
Aberdeen	3	38 57	76 32	Anne Arundel	56	54	115
Aisquith Creek	2	39 02	76 32	Anne Arundel	30	42	115
Aldridges Discovery	32	38 52	76 15	Talbot	30	182	209
Almshouse	3	38 56	76 32	Anne Arundel	60	53	115
Along Shore	37, 38	38 31	76 16	Dorchester	54	131	196
Applegarth	40	38 13	76 06	Dorchester	86	147	198
Arnold Point	2	39 02	76 32	Anne Arundel	31	44	115
Ash Craft	32	38 48	76 13	Talbot	19	187	209
Bachelor Point	34, 35	38 40	76 11	Talbot	92	220	206
Back of Island	20	38 19	76 28	Calvert	23	78	126
Back Shore	34, 35, 37	38 39	76 10	Talbot	112	220	210
Bailey	30	39 08	76 09	Kent	52	117	240
Bakers Cove	34	38 42	76 07	Talbot	104	226	207
Bald Eagle (Little Choptank River)	36, 37	38 33	76 18	Dorchester	34	129	196
Bald Eagle (Eastern Bay)	32	38 54	76 14	Queen Annes	62	156	226
Bamings Cove	34	38 43	76 08	Talbot	101	225	207
Barn Gates	20	38 20	76 29	Calvert	24	77	126
Barn Point	37	38 32	76 13	Dorchester	48	137	197
Barnett	34	38 46	76 11	Talbot	16	234	209
Barren Neck	3	38 51	76 32	Anne Arundel	82	58	116
Batts Neck	31	38 54	76 19	Queen Annes	43	137	227
Baxters Hollow	32	38 53	76 11	Queen Annes	85	161	225
Bay Bush Point	30	39 03	76 12	Kent	37	111	239
Bay Hundred	33	38 44	76 21	Talbot	40	194	210
Bay Shore	4	38 48	76 30	Anne Arundel	88	63	117
Bazzles Hill	34	38 47	76 12	Talbot	17	233	209
Beacons	35	38 38	76 07	Talbot	118	236	210
Bean Shoal	41	38 18	75 56	Dorchester	118	159	195
Beard Point	3	38 57	76 32	Anne Arundel	58	54	115
Beef Creek	14, 15	38 06	75 18	Worcester	13	53	246
Bell Buoy	41, 42	38 12	76 01	Dorchester	82	150	198
Belts	30	39 03	76 12	Kent	35	110	239
Benoni	34, 37	38 40	76 13	Talbot	90	219	210
Bibby	32	38 56	76 15	Queen Annes	65	151	226
Big Annesmessex	7	38 03	75 50	Somerset	23	73	182
Big Bay Point	15	38 04	75 17	Worcester	21	56	246
Big Hill	12	38 12	75 57	Wicomico	12	46	189
Big Island	2	39 03	76 34	Anne Arundel	34	44	115
Biscoe	24	38 12	76 27	St. Marys	56	165	146
Black	2	39 04	76 28	Anne Arundel	10	29	114

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic county publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Black Buoy (Chester River)	30	39 01	76 11	Kent	33	109	239
Black Walnut (Bretons Bay)	25	38 15	76 40	St. Marys	82	177	147
Black Walnut (Big Choptank River)	33, 36, 37	38 40	76 19	Talbot	45	197	210
Blakistone	26	38 17	76 48	St. Marys	114	191	148
Bloodsworth	40, 41	38 13	76 03	Dorchester	84	149	198
Blue Sow	25	38 14	76 42	St. Marys	91	178	147
Bluff Point (Chester River)	30	39 04	76 12	Kent	38	111	239
Bluff Point (Wicomico River)	26	38 16	76 49	St. Marys	113	191	148
Bluff Woods	25	38 16	76 43	St. Marys	100	183	148
Blunt	30	38 59	76 12	Queen Annes	22	120	227
Boat House	30	39 06	76 10	Kent	45	114	240
Bob Wise	20	38 20	76 29	St. Marys	15	139	145
Bodkin Island	31, 32	38 54	76 17	Queen Annes	55	146	227
Bodkin Point North	1	39 09	76 26	Anne Arundel	1	26	117
Bodkin Point South	1	39 07	76 25	Anne Arundel	2	27	117
Bodkin Shoals	31	38 53	76 18	Queen Annes	35	132	226
Bolingbroke Sand	35	38 35	76 03	Talbot	124	239	206
Bolston Bank	3	38 53	76 32	Anne Arundel	76	61	116
Booker Wharf	30	39 08	76 04	Queen Annes	2	129	227
Boundary	42	38 05	76 04	Dorchester	78	161	199
Bozman Neck	32	38 51	76 15	Talbot	26	183	209
Bramleigh Creek	26	38 18	76 50	St. Marys	117	189	149
Brannock	36, 37	38 36	76 17	Dorchester	27	120	199
Bretons Bay	25	38 15	76 42	St. Marys	90	178	147
Brewer (Severn River)	2	39 02	76 32	Anne Arundel	36	43	115
Brewer (South River)	3	38 56	76 32	Anne Arundel	61	52	115
Brice Fence	3	38 52	76 31	Anne Arundel	79	60	116
Brick House	31	38 57	76 22	Queen Annes	31	130	228
Brick House Hill	31	38 53	76 19	Queen Annes	36	133	226
Bridge	38	38 28	76 17	Dorchester	57	138	197
British Harbour	35	38 35	76 00	Talbot	128	241	206
Broad Creek	29	39 00	76 20	Queen Annes	30	116	228
Broad Creek Middle ground	34	38 44	76 14	Talbot	80	210	207
Broad Neck (Calvert Co.)	19	38 28	76 39	Calvert	37	71	126
Broad Neck (St. Marys Co.)	19	38 28	76 39	St. Marys	3	134	145
Brooks Shallows	19	38 30	76 40	St. Marys	1	133	145
Broome Island	19	38 24	76 34	Calvert	30	74	126
Brown	34	38 43	76 16	Talbot	69	208	207
Bruffs Island	32	38 51	76 12	Talbot	6	190	209
Brumell	37	38 33	76 13	Dorchester	45	135	197
Brushy Point	34	38 45	76 16	Talbot	76	212	208
Bryan (Wye River)	32	38 53	76 10	Queen Annes	87	162	225
Bryan (St. Marys River)	24	38 12	76 27	St. Marys	54	166	146

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Buce	3	38 53	76 32	Anne Arundel	73	62	116
Buckhorn	32	38 58	76 15	Queen Annes	70	147	226
Bugby	32	38 53	76 13	Queen Annes	77	158	226
Bullock	26	38 15	76 49	St. Marys	110	193	148
Bullock Island	26	38 15	76 48	St. Marys	109	193	148
Bungay	41	38 17	76 01	Dorchester	110	155	195
Bunker Hill	31	38 53	76 20	Queen Annes	37	133	226
Buoy	5	38 13	75 53	Somerset	3	62	183
Buoy Rock	29, 30	39 00	76 14	Kent	30	108	239
Butler	22	38 06	76 20	St. Marys	32	148	149
Butterpot	37	38 32	76 14	Dorchester	41	133	196
Buzzard Island	19	38 29	76 40	Calvert	39	70	127
Cabin Creek (Choptank River)	35	38 38	75 59	Dorchester	3	112	197
Cabin Creek (Prospect Bay)	32	38 56	76 13	Queen Annes	74	154	226
Cabin Creek Entrance	35	38 38	75 58	Dorchester	2	111	197
Camden Point	34	38 44	76 07	Talbot	110	229	207
Canoe Creek	25	38 15	76 44	St. Marys	101	182	148
Captain Point	19	38 23	76 32	St. Marys	9	136	145
Carpenter Island	30	39 01	76 11	Queen Annes	20	121	227
Carpenters Yard	26	38 30	76 40	Charles	3	54	132
Carroll Muds (Calvert Co.)	20	38 19	76 25	Calvert	15	82	126-127
Carroll Muds (St. Marys Co.)	20	38 19	76 25	St. Marys	22	142	145-149
Carthagen Creek	24	38 09	76 28	St. Marys	62	157	146
Carvel	29	39 00	76 17	Queen Annes	27	118	227
Cason	37	38 32	76 15	Dorchester	38	132	196
Castle Haven	35, 37	38 38	76 12	Dorchester	18	118	199
Castle Haven Creek	35	38 37	76 10	Dorchester	17	117	199
Cators	36, 37, 38	38 30	76 19	Dorchester	61	124	196
Cedar Island	31	38 55	76 17	Queen Annes	57	144	227
Cedar Point (West River)	3	38 51	76 31	Anne Arundel	84	58	116
Cedar Point (St. George River)	24	38 09	76 30	St. Marys	76	171	147
Cedar Point (Broad Creek)	34	38 44	76 14	Talbot	81	214	207
Cedar Point Hollow	20, 21	38 16	76 23	St. Marys	25	144	149
Cedar Shoal	11	38 18	75 54	Wicomico	6	44	189
Chadwick	24	38 10	76 31	St. Marys	79	173	147
Chain Shoal	7	38 07	75 58	Somerset	11	67	183
Chancellor Point	35	38 35	76 01	Talbot	127	240	206
Change	33	38 43	76 18	Talbot	51	200	208
Chapel Point	25	38 16	76 42	St. Marys	94	182	148
Chaptico Lumps	26	38 20	76 51	St. Marys	121	187	149
Charleston Creek	26	38 17	76 50	Charles	11	50	132
Chase	2	39 01	76 31	Anne Arundel	28	41	114
Cherry (R h o d e River)	3	38 53	76 31	Anne Arundel	72	60	115
Cherry (St. Marys River)	24	38 07	76 28	St. Marys	66	154	146

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° ' "	° ' "				
Cherry Island	37	38 34	76 13	Dorchester	44	136	197
Cherry Tree (Patuxent River)	20	38 19	76 27	Calvert	21	79	126
Cherry Tree (Nanticoke River)	11	38 18	75 55	Wicomico	8	44	189
Chester River Middleground	30	39 05	76 11	Kent	39	112	239
Cheston Point	3	38 52	76 31	Anne Arundel	80	59	116
Chicken Cock	24	38 07	76 26	St. Marys	41	153	146
Chinese Muds (Calvert Co.)	20	38 21	76 23	Calvert	13	83	127
Chinese Muds (St. Marys Co.)	20	38 19	76 22	St. Marys	24	143	149
Chinks Point	2	38 58	76 28	Anne Arundel	44	35	115
Chlora Point	35	38 38	76 09	Talbot	117	235	210
Choptank Lumps	34, 37	38 40	76 14	Talbot	89	218	210
Church Creek	8	37 59	76 05	Somerset	37	74	183
Church Hill	33, 34	38 41	76 18	Talbot	48	198	210
Clay Bank	33, 36	38 27	76 23	Talbot	43	196	210
Clay Island	41	38 14	75 59	Dorchester	112	153	195
Clem Point	2	39 01	76 32	Anne Arundel	37	42	115
Cliff	30	39 06	76 09	Kent	56	118	239
Coad	24	38 09	76 28	St. Marys	63	156	146
Coal Lump	28	39 15	76 15	Kent	3	96	241
Cobb Point	26	38 15	76 50	Charles	15	52	132
Coffee	32	38 52	76 13	Queen Annes	80	158	226
Cohouck	26	38 21	76 51	St. Marys	122	187	149
Collins Flats	3	38 51	76 31	Anne Arundel	85	57	116
Commander	35	38 35	76 07	Dorchester	14	116	199
Commegys Bight	30	39 06	76 08	Kent	57	119	239
Cook Point	36, 37	38 39	76 17	Dorchester	22	118	199
Cooper Creek	24	38 10	76 27	St. Marys	59	161	146
Coopers Point	34	38 45	76 16	Talbot	74	211	208
Coppage	24	38 10	76 27	St. Marys	60	161	146
Cormal	7	38 08	75 50	Somerset	17	69	182
Corners Wharf	37	38 37	76 13	Dorchester	19	129	199
Cove Point Bight	20	38 22	76 22	Calvert	9	85	127
Cow Island	36, 37	38 33	76 18	Dorchester	33	128	196
Cox	34	38 46	76 09	Talbot	15	235	209
Cox Neck	31	38 54	76 17	Queen Annes	56	145	227
Crab Alley Lumps	31, 32	38 55	76 16	Queen Annes	59	144	227
Crab Point	40	38 16	76 08	Dorchester	89	147	198
Creces Cove	2	38 59	76 29	Anne Arundel	23	37	114
Curtis	3	38 52	76 30	Anne Arundel	86	57	117
Daddie Dare	17	38 34	76 30	Calvert	5	66	127
Dark Point	40	38 18	76 10	Dorchester	94	144	198
Davis Creek	30	39 07	76 10	Kent	47	115	240
Dawson	34	38 41	76 17	Talbot	66	206	210
Deep Landing Hole	28, 29	39 09	76 16	Kent	11	101	241
Deep Neck	34	38 44	76 15	Talbot	70	209	207
Deep Point	30	39 07	76 07	Kent	59	119	239
Deep Point Mud	20	38 18	76 26	St. Marys	21	142	145
Deep Shoal	28	39 15	76 14	Kent	2	95	241
Deep Water	15	38 04	75 17	Worcester	23	57	246

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey publication of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Deep Water Point	32	38 48	76 13	Talbot	20	186	209
Diamond (Chesapeake Bay)	36, 37	38 37	76 20	Dorchester	25	120	199
Diamond (Chinco-teague Bay)	14, 15	38 06	75 17	Worcester	12	54	246
Dickinson	35	38 36	76 06	Talbot	121	238	210
Dividing	32	38 53	76 10	Queen Annes	96	166	225
Dixon	35	38 36	75 59	Dorchester	5	112	197
Dominion	32	38 56	76 15	Queen Annes	66	151	226
Double Mills	34	38 44	76 08	Talbot	108	228	207
Dredge Rock	29	39 01	76 15	Kent	26	106	239
Drum	15	38 04	75 16	Worcester	19	56	246
Drum Point (Chop-tank River)	35	38 39	75 57	Dorchester	1	111	197
Drum Point (Langford Creek)	30	39 07	76 10	Kent	46	114	240
Drum Point (Wye River)	32	38 53	76 11	Queen Annes	89	163	225
Drum Point (Manokin River)	7	38 07	75 53	Somerset	19	71	182
Drum Point (Broad Creek)	34	38 45	76 13	Talbot	82	214	207
Duck Island	41	38 16	76 00	Dorchester	111	155	195
Dukehart Channel	25	38 13	76 45	St. Marys	104	179	147
Dunbar	24	38 07	76 24	St. Marys	37	152	145
Dupont	36, 37	38 37	76 18	Dorchester	26	120	199
Durdin	30	39 02	76 12	Kent	34	109	239
Dutchman	3	38 52	76 30	Anne Arundel	70	56	117
Dutchman Hollow	3	38 52	76 31	Anne Arundel	71	59	115
Duvall	3	38 57	76 32	Anne Arundel	57	53	115
Eagle Point (Langford Creek)	30	39 08	76 10	Kent	49	116	240
Eagle Point (Harris Creek)	33	38 44	76 19	Talbot	52	201	208
Earle Cove	30	39 05	76 08	Queen Annes	10	126	228
East End	32	38 50	76 13	Talbot	9	189	209
East Neck Bay	29	39 04	76 16	Kent	23	105	241
Easter Cove	15	38 04	75 19	Worcester	16	55	246
Ebb Point	30	39 06	76 09	Kent	55	118	239
Edmund	24	38 08	76 27	St. Marys	64	155	146
Elbow	26	38 31	76 40	Charles	2	53	132
Emanuel	17, 18	38 30	76 29	Calvert	7	67	127
Emory Hollow	30	39 06	76 08	Queen Annes	6	128	227
Emory Wharf	30	39 05	76 08	Queen Annes	11	125	228
Ennis	14	38 11	75 14	Worcester	5	50	246
Entrance Lumps	29	39 03	76 15	Kent	24	106	240
Erickson Sands	31	38 55	76 19	Queen Annes	45	138	227
Evans (Fishing Bay)	41	38 15	76 01	Dorchester	102	154	195
Evans (Wicomico River)	5	38 13	75 54	Somerset	4	62	182
Fairhaven	4	38 45	76 33	Anne Arundel	90	64	116
Fenwick	26	38 18	76 50	Charles	9	49	132
Ferry (Kent Co.)	29	39 00	76 15	Kent	29	107	239
Ferry (Queen Annes Co.)	29	39 00	76 15	Queen Annes	26	118	227

NATURAL OYSTER BARS.

27

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Ferry Point	2	39 00	76 29	Anne Arundel	24	37	114
Fish Hawk	21, 22	38 09	76 19	St. Marys	29	146	149
Fishing Creek	37	38 32	76 12	Dorchester	50	138	197
Flag Pond	18	38 26	76 26	Calvert	8	68	127
Flat Island	3	38 53	76 32	Anne Arundel	74	62	116
Flat Rock	41	38 20	76 00	Dorchester	106	157	195
Flatty	34	38 43	76 08	Talbot	106	227	207
Flood Point	29	38 59	76 15	Queen Annes	24	119	226
Fort	24	38 08	76 26	St. Marys	42	155	146
Fox	34	38 46	76 14	Talbot	86	216	207
Fox Island	9	37 55	75 56	Somerset	26	75	183
Fox Hole	34	38 41	76 11	Talbot	93	221	206
Fox Point	3	38 56	76 31	Anne Arundel	54	51	115
France	34	38 41	76 17	Talbot	65	206	210
Frog Point	41	38 14	75 57	Dorchester	114	158	195
Gales Lumps	28	39 13	76 17	Kent	6	96	241
Gatton	19	38 24	76 34	St. Marys	8	136	145
Georges	5, 7	38 08	75 50	Somerset	15	64	182
Gibsons Flats	34	38 47	76 12	Talbot	13	233	209
Goodwin	20	38 19	76 28	St. Marys	18	140	145
Goose Creek	41	38 16	76 01	Dorchester	103	154	195
Goose Neck	34	38 42	76 10	Talbot	97	223	206
Goose Point (St. George River)	24	38 08	76 29	St. Marys	69	168	147
Goose Point (Chop-tank River)	35	38 36	76 00	Talbot	129	241	206
Gough	25	38 15	76 40	St. Marys	83	176	147
Governors Run	17, 18	38 31	76 30	Calvert	6	67	127
Granary Point	32	38 53	76 08	Queen Annes	98	167	225
Granger	36, 37, 38	38 30	76 20	Dorchester	62	124	196
Grapevine	37	38 32	76 11	Dorchester	51	138	197
Gravelly Run	24	38 11	76 26	St. Marys	51	162	146
Graves	24	38 07	76 25	St. Marys	39	151	145
Great Bar	34	38 43	76 15	Talbot	68	208	207
Great Marsh	34	38 42	76 17	Talbot	64	207	208
Great Rock	9	37 56	75 56	Somerset	25	75	183
Great Shoals	12	38 13	75 53	Wicomico	13	47	189
Green Marsh	35	38 35	76 04	Dorchester	9	114	199
Greenwood Creek	32	38 53	76 12	Queen Annes	78	157	226
Greeves Cove	31	38 55	76 20	Queen Annes	41	135	227
Guest Marshes	25	38 18	76 43	St. Marys	97	185	148
Gum	39, 40	38 20	76 12	Dorchester	97	142	198
Gum Spring	29	39 07	76 15	Kent	19	103	240
Gum Thicket	31	38 53	76 23	Queen Annes	32	131	228
Gunby	10	37 56	75 46	Somerset	30	77	182
Hackett Point	2	38 59	76 25	Anne Arundel	15	32	116
Hackle Creek	26	38 14	76 47	St. Marys	107	194	148
Haddaway	30	39 08	76 06	Kent	61	120	239
Hail Creek	30	39 01	76 12	Kent	31	108	239
Hail Point	30	39 00	76 12	Kent	32	109	239
Haines	5	38 11	75 58	Somerset	7	61	183
Half Pone	20	38 22	76 31	St. Marys	13	138	145
Half Way Mark	41	38 19	76 01	Dorchester	107	157	195
Halls Point	5	38 12	75 57	Somerset	6	61	182
Hambleton	32	38 50	76 14	Talbot	23	185	209

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Hambleton Hill	32	38 50	76 14	Talbot	25	184	209
Hambrooks	35	38 36	76 05	Dorchester	10	114	199
Handys Hammock	13, 14	38 12	75 14	Worcester	2	49	246
Harris	7	38 03	75 53	Somerset	22	73	183
Harrison	34	38 47	76 16	Talbot	79	214	207
Harry Jacks	25	38 18	76 43	St. Marys	98	186	148
Hawks Nest	20	38 20	76 30	St. Marys	14	188	145
Hellen	20	38 22	76 29	Calvert	26	76	126
Hells Delight	30	39 04	76 11	Queen Annes	17	123	227
Henpeck	36, 37, 38	38 31	76 19	Dorchester	60	125	196
Heron Island Reef	25	38 13	76 43	St. Marys	80	179	147
Heron Island Sound	25	38 14	76 43	St. Marys	81	179	147
Herring Island	32	38 50	76 13	Talbot	8	189	209
Hess	32	38 52	76 11	Queen Annes	91	164	225
Hickory Thicket	29	39 04	76 15	Kent	22	105	240
Hickory Nut	11	38 19	75 54	Wicomico	4	43	189
Hickory	40	38 16	76 10	Dorchester	92	145	198
High Island	3	38 53	76 32	Anne Arundel	75	61	116
Hill	41	38 19	76 01	Dorchester	108	156	195
Hill Point (Severn River)	3	38 55	76 30	Anne Arundel	53	51	115
Hill Point East	3	38 55	76 30	Anne Arundel	52	50	115
Hills and Holes	41	38 16	75 56	Dorchester	116	158	195
Hills Point (Chesapeake Bay)	36, 37	38 35	76 19	Dorchester	29	121	199
Hills Point North	36, 37	38 35	76 21	Dorchester	30	121	199
Hills Point South	36, 37	38 34	76 21	Dorchester	31	122	199
Hobbs	32	38 53	76 12	Queen Annes	84	160	225
Hodges	28	39 11	76 16	Kent	7	98	241
Hog Island (Prospect Bay)	32	38 58	76 15	Queen Annes	68	149	226
Hog Island (Patuxent River)	20	38 19	76 23	St. Marys	23	143	149
Hog Point	16	38 42	76 30	Calvert	1	64	127
Holland Straits	42	38 07	76 05	Dorchester	79	162	198
Holland	12	38 15	75 51	Wicomico	15	48	189
Holland Point (Chesapeake Bay)	4	38 44	76 30	Anne Arundel	91	65	117
Holland Point (Patuxent River)	19	38 30	76 40	Calvert	40	69	127
Holland Point (Broad Creek)	34	38 46	76 15	Talbot	78	213	207
Hollyday (Kent Co.)	30	39 08	76 05	Kent	62	120	239
Hollyday (Queen Annes Co.)	30	39 08	76 05	Queen Annes	3	129	227
Holton Point	30	39 05	76 09	Queen Annes	8	124	227
Hood	32	38 56	76 14	Queen Annes	73	153	226
Hooper	36, 37, 38	38 31	76 17	Dorchester	55	125	196
Hooper Strait	40	38 13	76 07	Dorchester	75	148	198
Hopkins	34, 35	38 40	76 09	Talbot	113	230	206
Hopkins Cove	41	38 13	76 03	Dorchester	85	149	198
Horn Point (Severn River)	2	38 58	76 28	Anne Arundel	43	36	115
Horn Point (Choptank River)	35	38 36	76 09	Dorchester	15	116	199

NATURAL OYSTER BARS.

29

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic county publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Horse	25	38 14	76 44	St. Marys	103	180	147
Horsehead North	15	38 03	75 16	Worcester	27	58	246
Horsehead South	15	38 03	75 16	Worcester	28	59	246
Horse-Point Channel	39, 40	38 18	76 14	Dorchester	72	140	199
Horse Race	30	39 02	76 11	Queen Annes	19	122	227
Horseshoe (St. Marys River)	24	38 12	76 27	St. Marys	53	165	146
Horseshoe (Miles River)	32	38 52	76 14	Talbot	29	182	209
Howells Point	35	38 37	76 07	Talbot	120	237	210
Hudson (Little Choptank River)	37	38 33	76 15	Dorchester	39	133	19
Hudson (Chester River)	30	39 06	76 11	Kent	43	113	240
Hungerford Hollow	20	38 20	76 29	Calvert	25	76	126
Huntingfield	29	39 07	76 15	Kent	18	103	240
Hunts	33	38 44	76 19	Talbot	55	202	208
Hurdle	24	38 08	76 29	St. Marys	68	167	147
Ingram Shoal	12	38 14	75 52	Wicomico	14	47	189
Inner Round Point	3	38 55	76 31	Anne Arundel	64	50	115
Irish Creek	34	38 41	76 13	Talbot	88	217	210
Inside Greenbury Island	2	38 59	76 27	Anne Arundel	20	35	114
Island	25	38 16	76 39	St. Marys	86	174	147
Island Cove	31	38 57	76 19	Queen Annes	50	141	227
Island Creek (Patuxent River)	19	38 24	76 33	Calvert	29	74	126
Island Creek (Choptank River)	34, 35	38 40	76 08	Talbot	115	231	206
Island Point	30	39 08	76 10	Kent	48	115	240
Island Shore	24	38 08	76 29	St. Marys	70	168	147
Jackass	3	38 53	76 31	Anne Arundel	77	61	116
Jacks Bay	19	38 25	76 35	Calvert	32	73	126
Jacks Marsh	19	38 26	76 37	Calvert	33	72	126
Jamaica Point	35	38 37	75 59	Talbot	131	242	206
James Point	36	38 33	76 22	Dorchester	65	122	199
Jane	41	38 12	76 01	Dorchester	81	151	198
Joe Harris Flats	34	38 44	76 13	Talbot	83	215	207
Joes Lumps	26	38 19	76 51	Charles	7	48	132
Johnson Island	31	38 56	76 17	Queen Annes	58	143	227
Johnston	34	38 44	76 08	Talbot	109	229	207
Jones (Little Choptank River)	37	38 33	76 12	Dorchester	46	136	197
Jones St. Marys River)	24	38 10	76 26	St. Marys	46	159	146
Jones Hole	31	38 56	76 19	Queen Annes	48	140	227
Judys Point	34	38 45	76 17	Talbot	75	212	208
Juniper	32	38 53	76 09	Talbot	1	193	209
Jutland	24	38 07	76 25	St. Marys	38	151	145
Kedge Straits	6	38 04	76 05	Somerset	35	65	183
Kennedy	24	38 10	76 26	St. Marys	49	159	146
Kennel	15	38 04	75 17	Worcester	20	56	246
Kent Island Narrows	29	38 58	76 15	Queen Annes	25	120	226
Kent Point	31	38 51	76 23	Queen Annes	33	131	228

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
Key	26	38 22	76 51	St. Marys	123	186	149
Kings Creek	30	39 08	76 09	Kent	51	116	240
Kirby	35	38 36	76 05	Talbot	122	238	210
Kitts Creek East	10	37 58	75 42	Somerset	33	79	182
Kitts Creek West	10	37 58	75 43	Somerset	32	78	182
Kitts Marsh	19	38 27	76 37	Calvert	35	71	126
La Grande	20	38 18	76 27	St. Marys	19	141	145
La Trappe	35	38 38	76 07	Talbot	119	236	206
Lakes Cove	40	38 17	76 09	Dorchester	93	144	198
Lambertson Landing	14	38 12	75 15	Worcester	4	50	246
Lancaster	26	38 17	76 50	Charles	12	50	132
Langley Hollow	24	38 09	76 26	St. Marys	43	156	146
Le Compte	35	38 37	76 09	Dorchester	16	117	199
Levin Tump	15	38 04	75 16	Worcester	25	58	246
Light House	34, 35, 37	38 39	76 11	Talbot	91	219	210
Light House Lump	20	38 19	76 25	Calvert	17	82	126
Limekiln	30	39 05	76 12	Kent	40	112	240
Little Choptank	36, 37	38 31	76 19	Dorchester	59	126	196
Little Cove Point	20	38 21	76 23	Calvert	10	85	127
Little Neck (Swan Creek)	28, 29	39 08	76 16	Kent	10	101	241
Little Neck (Harris Creek)	33, 34	38 46	76 18	Talbot	60	205	208
Little Pollard	37	38 32	76 16	Dorchester	37	132	196
Little Sandy	2	38 59	76 28	Anne Arundel	22	37	114
Lodges	33	38 45	76 19	Talbot	57	203	208
Logans Hill	37	38 39	76 13	Dorchester	20	129	199
Long (Chesapeake Bay)	4	38 45	76 32	Anne Arundel	89	64	117
Long (St. George River)	24	38 09	76 31	St. Marys	78	173	147
Long Point (Ches-ter River)	29, 30	39 00	76 14	Queen Annes	23	119	227
Long Point (East-ern Bay)	31	38 52	76 20	Queen Annes	34	132	226
Long Point (Poco-moke Sound)	9	37 57	75 49	Somerset	29	77	182
Long Point (Miles River)	34	38 46	76 11	Talbot	14	234	209
Long Point Woods	34	38 42	76 16	Talbot	67	207	207
Long Shoal	11	38 18	75 55	Wicomico	7	44	189
Louis Cove	34	38 42	76 09	Talbot	100	224	206
Love Point	29	39 03	76 18	Queen Annes	29	117	228
Lovers Point	25	38 16	76 39	St. Marys	84	175	147
Lower Forrest	19	38 25	76 36	St. Marys	7	135	145
Lower Newfoundland	41	38 19	75 55	Dorchester	120	160	195
Lower Steps	16	38 38	76 31	Calvert	3	65	127
Lower Thoroughfare	40	38 15	76 09	Dorchester	88	146	198
Lows Point	31, 33	38 48	76 20	Talbot	37	178	210
Lulu	3	38 53	76 27	Anne Arundel	69	55	117
Lumps East of Craig-hill Channel	1	39 07	76 22	Anne Arundel	3	26	117

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
McKay	21	38 10	76 20	St. Marys	28	146	149
McKells Point	37	38 33	76 14	Dorchester	42	134	196
Macks Hollow	19	38 29	76 39	Calvert	38	70	127
Man O'War Shoals	27	39 11	76 22	Baltimore	3	34	103
Manahowic Creek	26	38 19	76 50	St. Marys	118	189	149
Mares Point	34	38 42	76 09	Talbot	99	224	206
Marshall	36, 37, 38	38 29	76 20	Dorchester	64	123	197
Marshy	34	38 43	76 09	Talbot	105	227	207
Marshy Island	7	38 07	75 53	Somerset	18	70	182
Marshy Point	3	38 54	76 29	Anne Arundel	67	48	115
Martin Point	14, 15	38 05	75 18	Worcester	15	54	246
Marumso	10	37 57	75 44	Somerset	31	78	182
Marys Delight	31	38 49	76 19	Talbot	36	178	210
Mattapex	31	38 55	76 20	Queen Annes	42	136	227
Matthews	34, 35	38 40	76 08	Talbot	116	232	206
Mears (Calvert Co.)	19, 20	38 22	76 30	Calvert	27	75	126
Mears (St. Marys Co.)	19, 20	38 22	76 30	St. Marys	12	137	145
Melton Point	30	39 08	76 04	Kent	63	121	239
Melvin	32	38 53	76 10	Queen Annes	95	166	225
Middle Block	31	38 54	76 18	Queen Annes	53	134	226
Middleground	12	38 14	75 55	Wicomico	11	46	189
Middleground Lump	24	38 08	76 27	St. Marys	65	155	146
Milbourne Shore	24	38 08	76 29	St. Marys	71	169	147
Mileys Creek	25	38 16	76 43	St. Marys	99	183	148
Mill Dam	35	38 36	75 59	Talbot	130	242	206
Mill Hill	32	38 54	76 13	Queen Annes	76	156	226
Mill Point (Chesapeake Bay)	36, 37	38 36	76 18	Dorchester	28	121	199
Mill Point (Harris Creek)	33	38 45	76 18	Talbot	54	202	208
Millers Island	27	39 13	76 21	Baltimore	2	34	103
Mills	32	38 52	76 12	Queen Annes	83	160	225
Mills East	26	38 20	76 51	St. Marys	120	188	149
Mills West	26	38 20	76 51	Charles	6	47	132
Millstone	20	38 18	76 26	St. Marys	20	141	145
Mink Tump	15	38 04	75 19	Worcester	17	55	246
Mitchells Bluff Buoy	28	39 13	76 16	Kent	5	97	241
Mouldy Creek	25	38 16	76 38	St. Marys	85	174	147
Mouth of Creek	24	38 07	76 28	St. Marys	124	153	146
Mouth of River	26	38 15	76 49	St. Marys	111	192	148
Mount Vernon Wharf	5	38 15	75 48	Somerset	1	63	183
Mountain Point	1, 2	39 05	76 25	Anne Arundel	4	27	117
Mud (Dorchester Co.)	41	38 10	76 00	Dorchester	80	151	198
Mud (Chester River)	29, 30	39 01	76 14	Kent	28	107	239
Mud (Somerset Co.)	5	38 09	76 00	Somerset	9	60	183
Muddy Drain	29	39 08	76 16	Kent	17	102	240
Mulberry Point	34	38 45	76 15	Talbot	71	209	207
Mummys Cove	30	39 07	76 06	Queen Annes	4	129	227
Mussel Hole	7	38 04	75 59	Somerset	12	66	183
Neale	19, 20	38 23	76 31	St. Marys	11	137	145

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shelf Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
New	41	38 15	75 56	Dorchester	115	158	195
New Discovery	39	38 18	76 17	Dorchester	71	139	199
Newport	13, 14	38 12	75 14	Worcester	3	50	246
Newtown Flats	25	38 14	76 43	St. Marys	93	181	148
Nichols	30	39 05	76 11	Kent	42	113	239
Nine Acres	36, 37	38 31	76 18	Dorchester	58	126	196
Norman	40	38 15	76 07	Dorchester	87	147	198
Normans Fine Eyes	31, 32	38 55	76 17	Queen Annes	60	145	227
Normans Marsh	32	38 56	76 15	Queen Annes	64	152	226
Northwest (Kent Co)	30	39 08	76 05	Kent	64	121	239
Northwest (Queen Annes Co)	30	39 09	76 05	Queen Annes	1	130	227
Northwest Middle-ground	42	38 07	76 11	Dorchester	76	160	199
Old Field	30	39 05	76 10	Queen Annes	14	124	227
Old Fort	2	38 59	76 28	Anne Arundel	21	36	114
Old Hare	24	38 06	76 25	St. Marys	35	149	145
Old House	41	38 18	76 02	Dorchester	104	156	195
Old House Point	34	38 43	76 08	Talbot	102	225	207
Old Lump	20	38 19	76 25	Calvert	16	82	126
Old Orchard (Tangier Sound)	5	38 10	75 58	Somerset	8	60	183
Old Orchard (Miles River)	34	38 47	76 12	Talbot	18	232	209
Old Woman	3	38 54	76 28	Anne Arundel	49	47	117
Old Womens Patch	11	38 18	75 54	Wicomico	5	43	189
Old Wreck	25	38 14	76 44	St. Marys	102	181	148
Orem	34	38 43	76 09	Talbot	107	228	207
Outer Hole	41	38 18	75 55	Dorchester	119	159	195
Outer Magothy	2	39 03	76 24	Anne Arundel	12	30	117
Outer Round Point	3	38 55	76 30	Anne Arundel	65	50	115
Oyster Creek (Little Choptank River)	36, 37, 38	38 30	76 20	Dorchester	63	124	197
Oyster Creek (Kedge Straits)	6	38 04	76 04	Somerset	34	65	183
Oyster Shell Point	35	38 35	76 00	Dorchester	6	113	197
Paca	32	38 53	76 11	Queen Annes	86	161	225
Pagan	24	38 12	76 27	St. Marys	57	164	146
Park	2	39 05	76 29	Anne Arundel	8	29	114
Parker Moore	20	38 21	76 24	Calvert	11	84	127
Parkers Wharf	19	38 25	76 34	Calvert	31	73	126
Parsons Island	32	38 54	76 16	Queen Annes	61	146	227
Parsons Island Narrows	32	38 55	76 15	Queen Annes	63	155	226
Pattison	37	38 34	76 11	Dorchester	47	137	197
Paul	40	38 16	76 08	Dorchester	90	146	198
Paw Paw Hollow	25	38 16	76 39	St. Marys	87	175	147
Pea Hill	31	38 55	76 19	Queen Annes	46	139	227
Peach Hill	2	39 05	76 27	Anne Arundel	6	28	114
Peach Orchard	2	39 00	76 29	Anne Arundel	25	38	114
Peanut	39, 40	38 21	76 12	Dorchester	98	142	198
Peanut Hill	36, 37	38 33	76 19	Dorchester	32	127	196

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
Pecks Point	34	38 42	76 10	Talbot	98	223	206
Persimmon	2	39 03	76 26	Anne Arundel	11	30	114
Persimmon Tree	32	38 51	76 13	Queen Annes	81	159	225
Peterson (Calvert Co.)	19, 20	38 24	76 31	Calvert	28	75	126
Peterson (St. Marys Co.)	19, 20	38 24	76 32	St. Marys	10	137	145
Philibys	9	37 57	75 55	Somerset	24	74	183
Philips	30	39 08	76 09	Kent	53	117	240
Phoenix Shoal	28	39 17	76 13	Kent	1	95	241
Pin Cushion	34	38 44	76 12	Talbot	84	215	207
Pine Tree	31	38 54	76 20	Queen Annes	39	135	226
Piney Island East	7	38 04	75 54	Somerset	21	72	183
Piney Island Swash	7	38 07	75 55	Somerset	14	68	182
Piney Island West	7	38 05	75 57	Somerset	13	67	183
Piney Point (Kent Co.)	30	39 03	76 12	Kent	36	110	239
Piney Point (Queen Annes Co.)	30	39 03	76 12	Queen Annes	18	122	227
Pleasant Hill	33, 34, 36	38 41	76 17	Talbot	47	198	210
Plum Point	16, 17	38 37	76 29	Calvert	4	66	127
Point (Severn River)	2	39 02	76 32	Anne Arundel	29	42	114
Point (Fishing Bay)	41	38 19	76 01	Dorchester	109	156	195
Point Look-in	22	38 05	76 19	St. Marys	33	148	149
Point Lookout	22, 23	38 03	76 19	St. Marys	34	149	149
Pompes	34	38 45	76 16	Talbot	73	211	208
Pond Marsh	31	38 56	76 19	Queen Annes	49	140	227
Pone	33	38 42	76 22	Talbot	41	195	210
Poplar	30	39 00	76 11	Queen Annes	21	121	227
Poplar Island	31, 33	38 46	76 23	Talbot	38	177	210
Poplar Island Narrows	33	38 46	76 21	Talbot	39	193	208
Poplar Point	32	38 53	76 10	Talbot	2	192	209
Poppin Point	2	39 02	76 33	Anne Arundel	35	43	115
Possum Point	30	39 05	76 07	Queen Annes	13	127	228
Potato Hill	3	38 52	76 31	Anne Arundel	81	57	116
Prickly Point	7	38 05	75 54	Somerset	20	72	183
Priest	24	38 09	76 26	St. Marys	44	157	146
Prison Point	19	38 27	76 37	Calvert	34	72	126
Prospect	32	38 57	76 14	Queen Annes	72	150	226
Prospect Point	32	38 53	76 12	Queen Annes	79	157	226
Punch Island Creek	38	38 25	76 19	Dorchester	67	139	199
Purdy Flats	3	38 56	76 31	Anne Arundel	62	52	115
Purnell Hammock	14	38 06	75 17	Worcester	11	53	246
Rabbit Island	34	38 46	76 17	Talbot	61	205	208
Race Horse (Queen Annes Co.)	32	38 52	76 11	Queen Annes	93	165	225
Race Horse (Talbot Co.)	32	38 52	76 11	Talbot	4	191	209
Ragged Point	36, 37	38 32	76 18	Dorchester	36	127	196
Ragged Point Flats	36, 37	38 33	76 17	Dorchester	35	128	196
Railway	25	38 15	76 42	St. Marys	89	177	147
Raleys Shore	24	38 09	76 26	St. Marys	45	158	146
Rattlesnake	14, 15	38 06	75 18	Worcester	14	54	246

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey publication of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Red Buoy	36, 37	38 39	76 18	Dorchester	23	119	199
Red Sector	41	38 13	76 02	Dorchester	83	150	198
Reed Point	25	38 17	76 43	St. Marys	96	184	148
Reeds	30	39 04	76 10	Queen Annes	16	123	227
Richland	40	38 13	76 08	Dorchester	74	148	199
Rich Neck	31	38 52	76 17	Talbot	33	180	209
Ringold Middle-ground	31	38 54	76 18	Queen Annes	44	138	227
Roaring Point, East	11, 12	38 16	75 56	Wicomico	10	45	189
Roaring Point, West	41	38 16	75 56	Dorchester	117	159	195
Robins Cove	30	39 04	76 10	Queen Annes	15	123	227
Robins Marsh	14	38 09	75 15	Worcester	8	52	246
Rock Creek	5	38 12	75 55	Somerset	5	62	182
Rockhall	28, 29	39 09	76 15	Kent	14	100	241
Rock Point (South River)	3	38 55	76 31	Anne Arundel	63	51	115
Rock Point (Wicomico River)	26	38 16	76 50	Charles	13	51	132
Rock Point, Lower	2	39 01	76 31	Anne Arundel	27	41	114
Rock Point, Upper	2	39 03	76 33	Anne Arundel	32	45	115
Rocky Beach	21	38 12	76 22	St. Marys	26	144	149
Rollin	24	38 09	76 30	St. Marys	75	171	147
Rooks	31	38 57	76 19	Queen Annes	51	142	227
Rosecroft Hollow	24	38 10	76 26	St. Marys	50	162	146
Ross	37	38 33	76 15	Dorchester	40	134	197
Rough Point	3	38 57	76 33	Anne Arundel	59	54	115
Round Bay	2	39 03	76 33	Anne Arundel	33	44	115
Royston	34	38 41	76 14	Talbot	87	217	210
Ruler Flats	3	38 55	76 29	Anne Arundel	50	49	115
Russell	26	38 20	76 51	St. Marys	119	188	149
St. Catherine	26	38 15	76 47	St. Marys	108	194	148
St. Clement Entrance	25	38 14	76 44	St. Marys	92	180	147
St. George	24	38 08	76 28	St. Marys	67	167	147
St. Inigoes, North	24	38 10	76 25	St. Marys	48	160	146
St. Inigoes, South	24	38 10	76 25	St. Marys	47	160	147
St. Jerome	22	38 07	76 20	St. Marys	30	147	149
St. Margaret	26	38 15	76 49	St. Marys	112	192	148
Saltwork (Little Choptank River)	37	38 32	76 12	Dorchester	49	137	197
Saltworks (Severn River)	2	39 01	76 31	Anne Arundel	38	41	115
Sandgates	19	38 25	76 37	St. Marys	5	134	145
Sand Lump	11	38 19	75 54	Wicomico	3	43	189
Sand Shoal	41	38 14	76 00	Dorchester	101	153	195
Sand Spit	2	39 00	76 26	Anne Arundel	17	33	114
Sand Thistle	30	39 06	76 11	Kent	44	113	240
Sands	33	38 41	76 18	Talbot	46	197	210
Sandy Hill	35	38 36	76 07	Dorchester	13	115	199
Sandy Hill Lumps	35	38 36	76 06	Dorchester	12	115	199
Sandy Point (Prospect Bay)	32	38 58	76 15	Queen Annes	69	149	226
Sandy Point (Manokin River)	7	38 08	75 48	Somerset	16	68	182

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic county publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
Sandy Point (Chinco- teague Bay)	14	38 10	75 15	Worcester	7	51	246
Sandy Point Lumps	20	38 19	76 27	Calvert	22	80	126
Sandy Point, North	2	39 02	76 23	Anne Arundell	13	31	116
Sandy Point, South	2	39 00	76 24	Anne Arundel	14	31	116
Saunders	3	38 53	76 29	Anne Arundel	68	55	117
Saw Mill Creek	32	38 55	76 13	Queen Annes	75	155	226
Scarboro Creek	14	38 09	75 16	Worcester	9	52	246
Scraping Line	35	38 35	76 04	Talbot	123	239	210
Scotland	32	38 49	76 13	Talbot	21	186	209
Sea Turtle	32	38 51	76 15	Talbot	27	183	209
Second Point	32, 34	38 47	76 12	Talbot	12	187	209
Sedge Marsh	31	38 51	76 18	Talbot	34	179	209
Sedge Point	24	38 06	76 26	St. Marys	40	153	146
Seminary	24	38 11	76 26	St. Marys	52	163	146
Seths Point	33	38 45	76 18	Talbot	56	203	208
Sharkfin Shoal	41	38 13	76 00	Dorchester	113	152	198
Sharp	33, 36, 37	38 37	76 21	Talbot	44	196	210
Sharp Point	2	39 00	76 31	Anne Arundel	39	40	115
Shaving Pile	22	38 07	76 18	St. Marys	31	147	149
Shaw Bay Hill	32	38 51	76 11	Talbot	5	191	209
Shawns Wharf	32	38 53	76 09	Queen Annes	97	167	225
Sheep (Kent Co.)	30	39 07	76 07	Kent	58	119	239
Sheep (Queen Annes Co)	30	39 06	76 07	Queen Annes	5	128	227
Sheep (Chinco- teague Bay)	15	38 04	75 19	Worcester	18	55	246
Shehan	24	38 09	76 30	St. Marys	77	172	147
Shell Pile	20	38 19	76 27	Calvert	20	78	126
Ship Point	30	39 05	76 07	Queen Annes	12	126	228
Shippen Creek	30	39 07	76 06	Kent	60	120	239
Shippen Hole	32	38 51	76 12	Queen Annes	82	159	225
Shipping Creek	31	38 54	76 20	Queen Annes	40	137	227
Shipping Point	26	38 16	76 50	Charles	14	52	132
Shoal Creek	35	38 34	76 03	Dorchester	8	113	197
Short Point	24	38 12	76 27	St. Marys	55	166	146
Side Shoal	29, 30	39 01	76 14	Kent	27	107	239
Sillery Bay	1	39 05	76 27	Anne Arundel	7	28	114
Silver Spring	26	38 14	76 47	St. Marys	106	195	148
Simmons	20	38 20	76 24	Calvert	14	83	127
Slaughter Creek	36, 37, 38	38 30	76 16	Dorchester	56	125	196
Smith Creek	24	38 07	76 25	St. Marys	36	150	145
Smith Point	33	38 46	76 18	Talbot	59	204	208
Smoke Point	40	38 18	76 12	Dorchester	95	143	198
Sothoron	19	38 30	76 40	St. Marys	2	133	145
South Point	13, 14	38 12	75 13	Worcester	1	49	246
Southeast Middle- ground (Patuxent River)	20	38 19	76 26	Calvert	18	81	126
Southeast Middle- ground (Chesa- peake Bay)	42	38 06	76 10	Dorchester	77	161	199
Southwest	14	38 09	75 16	Worcester	10	53	246
Southwest Middle- ground	6, 8	38 00	76 09	Somerset	36	65	183

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic county publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Spaniard Point	30	39 06	76 09	Queen Annes	7	127	227
Spar Buoy	35	38 38	75 59	Talbot	132	242	206
Spedden	36, 37	38 38	76 19	Dorchester	24	119	199
Spencers	20	38 19	76 29	St. Marys	16	139	145
Spout	19	38 31	76 40	Calvert	41	69	127
States Bank	35	38 34	76 02	Dorchester	7	113	197
Stevens	31	38 55	76 19	Queen Annes	47	139	227
Stewart Island	34	38 42	76 10	Talbot	96	222	206
Stoddard	26	38 22	76 51	Charles	4	46	132
Stone (Pocomoke Sound)	9	37 56	75 48	Somerset	27	76	182
Stone (Chesapeake Bay)	33, 36	38 39	76 22	Talbot	42	195	210
Stone Church	34, 35	38 41	76 11	Talbot	94	221	206
Stone Pile	39	38 20	76 17	Dorchester	68	139	199
Stone Wharf	32	38 52	76 11	Queen Annes	92	164	225
Stony	25	38 16	76 40	St. Marys	88	176	147
Stony Hollow	3	38 53	76 31	Anne Arundel	78	60	116
Straits	24	38 08	76 30	St. Marys	72	170	147
Striking Marsh	15	38 04	75 16	Worcester	24	57	246
Strong Bay	29	39 01	76 17	Queen Annes	28	117	227
Sugar Loaf	35	38 34	76 02	Talbot	126	240	206
Susquehanna	37	38 31	76 16	Dorchester	53	132	196
Swan	24	38 09	76 30	St. Marys	74	171	147
Swan Creek	28	39 09	76 15	Kent	15	100	241
Swan Point	28, 29	39 08	76 18	Kent	8	99	241
Swan Reef	3	38 55	76 29	Anne Arundel	51	49	115
Swash	20	38 19	76 27	Calvert	19	80	126
Sycamore	32	38 50	76 12	Talbot	10	188	209
Tanners Patch	35	38 37	75 59	Dorchester	4	112	197
Tar Bay	39	38 20	76 15	Dorchester	69	141	196
Tarkhill	24	38 09	76 30	St. Marys	73	170	147
Tavern Creek	28, 29	39 09	76 16	Kent	9	102	241
Tea Table	27	39 13	76 19	Baltimore	1	33	103
Teague	26	38 32	76 40	Charles	1	53	132
Tenacres	21	38 11	76 21	St. Marys	27	145	149
The Black Buoy (Choptank River)	35	38 34	76 02	Talbot	125	239	206
The Haven	28, 29	39 09	76 15	Kent	13	101	241
Thomas (Calvert Co.)	19	38 28	76 39	Calvert	36	71	126
Thomas (St. Marys Co.)	19	38 27	76 38	St. Marys	4	134	145
Thomas Point North	3	38 55	76 26	Anne Arundel	47	46	116
Thomas Point South	3	38 54	76 27	Anne Arundel	48	47	116
Thompson Creek	24	38 09	76 27	St. Marys	61	158	146
Thompsons	31	38 57	76 19	Queen Annes	52	143	227
Thorough	41	38 19	76 02	Dorchester	105	157	195
Three Sisters	3	38 51	76 29	Anne Arundel	87	56	117
Thunder and Lightning	3	38 56	76 31	Anne Arundel	55	52	115
Tidemill	32	38 49	76 14	Talbot	22	185	209
Tilghman Wharf	33	38 42	76 19	Talbot	50	200	208
Tilghmans Point	31, 32	38 52	76 16	Talbot	32	180	209

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Tobacco Stick	37	38 32	76 14	Dorchester	52	133	196
Toby	15	38 04	75 18	Worcester	22	57	246
Todd Point	37	38 39	76 15	Dorchester	21	130	199
Tolchester Lump	28	39 13	76 15	Kent	4	97	241
Tolly Point	2, 3	38 57	76 27	Anne Arundel	45	34	116
Town	37	38 33	76 13	Dorchester	43	135	196
Town Creek	20	38 19	76 29	St. Marys	17	140	145
Town Point (Cor-sica River)	30	39 05	76 08	Queen Annes	9	125	228
Town Point (Tred Avon River)	34	38 42	76 11	Talbot	95	222	206
Traces Hollow	2	39 00	76 30	Anne Arundel	26	40	114
Travers	36, 38	38 30	76 22	Dorchester	66	123	199
Trippe	34	38 43	76 07	Talbot	103	226	207
Tubbmans Drain	39, 40	38 21	76 13	Dorchester	99	142	198
Tucker	3	38 51	76 32	Anne Arundel	83	59	116
Turkey Neck	33	38 44	76 18	Talbot	53	201	208
Turkey Point (South River)	3	38 55	76 30	Anne Arundel	66	48	115
Turkey Point (Eastern Bay)	31	38 54	76 18	Queen Annes	54	134	226
Turnrow	33, 34	38 43	76 18	Talbot	63	199	208
Turpin	14	38 10	75 15	Worcester	6	51	246
Turtle Back (Chop-tank River)	35	38 36	76 06	Dorchester	11	114	199
Turtle Back (Miles River)	32	38 51	76 14	Talbot	28	182	209
Turtle Egg Island	5, 7	38 07	76 00	Somerset	10	59	183
Umphasis	2	39 04	76 29	Anne Arundel	9	29	114
Under the Bar	29	39 06	76 16	Kent	20	104	240
Under the Cliffs	20	38 21	76 24	Calvert	12	84	127
Under the Gums	3	38 56	76 27	Anne Arundel	46	45	116
Upper Forrest	19	38 25	76 36	St. Marys	6	135	145
Upper Harris Creek	31, 32, 34	38 47	76 16	Talbot	62	181	208
Upper Hill	32	38 52	76 15	Talbot	31	181	209
Upper Newfound-land	41	38 19	75 54	Dorchester	121	160	195
Upper Stake	11	38 20	75 53	Wicomico	1	42	189
Upper Steps	16	38 41	76 31	Calvert	2	65	127
Wade	2	39 00	76 30	Anne Arundel	40	39	115
Wades Point	31	38 50	76 18	Talbot	35	179	209
Walnut	33	38 46	76 18	Talbot	58	204	208
Walter White	32	38 57	76 15	Queen Annes	67	150	226
Ware (Chesapeake Bay)	39, 40	38 17	76 13	Dorchester	73	140	199
Ware (Langford Creek)	30	39 09	76 09	Kent	54	117	240
Ware Sands	41	38 13	76 02	Dorchester	100	152	195
Waterloo	26	38 14	76 47	St. Marys	105	195	148
Watermelon Point	34	38 45	76 07	Talbot	111	229	207
Watkins	9	37 56	75 48	Somerset	28	76	182
Weems Lower	2	39 00	76 29	Anne Arundel	42	38	115
Weems Upper	2	39 00	76 30	Anne Arundel	41	39	115
Welch	2	39 05	76 27	Anne Arundel	5	28	114
Well Cove	32	38 58	76 15	Queen Annes	71	148	226

ALPHABETICAL INDEX TO NATURAL OYSTER BARS—Continued.

Name of oyster bar	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic county publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
Well Point	34	38 45	76 16	Talbot	72	210	208
West End	32	38 50	76 13	Talbot	24	184	209
West St. Marys	24	38 11	76 27	St. Marys	58	163	146
Wetipquin	11	38 20	75 53	Wicomico	2	42	189
Whetstone	32	38 52	76 10	Queen Annes	94	165	225
Whitehall	2	38 58	76 27	Anne Arundel	19	33	114
Whitehall Creek	2	39 00	76 26	Anne Arundel	18	32	114
White Horse	28, 29	39 09	76 15	Kent	12	100	241
White Marsh	29	39 06	76 15	Kent	21	104	240
White Point	26	38 17	76 49	St. Marys	116	190	148
White Point Hollow	26	38 17	76 49	St. Marys	115	190	149
White Rock	15	38 03	75 17	Worcester	26	58	246
White Wood	39	38 19	76 14	Dorchester	70	141	196
Wickes Beach	29	39 02	76 16	Kent	25	106	239
Wicomico Lumps	26	38 21	76 51	Charles	5	47	132
Wicomico Middle-ground	26	38 18	76 50	Charles	10	49	132
Wild Cherry Tree	33	38 42	76 18	Talbot	49	199	208
Wild Ground (Eastern Bay)	31	38 54	76 19	Queen Annes	38	135	226
Wild Ground (Miles River)	32	38 49	76 13	Talbot	11	188	209
Willey's Island	34	38 45	76 14	Talbot	85	216	207
Willey's Island Flats	34	38 45	76 14	Talbot	77	212	207
Willis	34, 35	38 40	76 09	Talbot	114	230	206
Willow Bottom	30	39 05	76 11	Kent	41	112	239
Wilson Shoals	11	38 18	75 55	Wicomico	9	45	189
Wilsons Point	30	39 09	76 11	Kent	50	116	240
Winders Bank	32	38 52	76 10	Talbot	3	192	209
Windmill (Wicomico River)	26	38 19	76 51	Charles	8	48	132
Windmill (Honga River)	40	38 16	76 10	Dorchester	91	145	198
Windmill Flats	29	39 08	76 16	Kent	16	102	240
Wingate	5	38 14	75 52	Somerset	2	63	183
Wreck Buoy	2	38 58	76 26	Anne Arundel	16	34	116
Wroten Island	39, 40	38 19	76 12	Dorchester	96	143	198
Wye Island	32	38 53	76 11	Queen Annes	88	162	225
Wye River Middle-ground	32	38 53	76 11	Queen Annes	90	163	225
Wye Town	32	38 51	76 12	Talbot	7	190	209

NATURAL OYSTER BARS.

NUMERICAL INDEX.

NOTE.—See Alphabetical Index for other references relating to natural oyster bars.

ANNE ARUNDEL COUNTY.

County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar
1	Bodkin Point North	33	Round Bay	63	Rock Point (South River)
2	Bodkin Point South	34	Big Island	64	Inner Round Point
3	Lumps East of Craig-hill Channel	35	Poppin Point	65	Outer Round Point
4	Mountain Point	36	Brewer (Severn River)	66	Turkey Point (South River)
5	Welch	37	Clem Point	67	Marshy Point
6	Peach Hill	38	Saltworks (Severn River)	68	Saunders
7	Sillery Bay	39	Sharp Point	69	Lulu
8	Park	40	Wade	70	Dutchman
9	Umphasis	41	Weems Upper	71	Dutchman Hollow
10	Black	42	Weems Lower	72	Cherry (Rhode River)
11	Persimmon	43	Horn Point (Severn River)	73	Buce
12	Outer Magothy	44	Chinks Point	74	Flat Island
13	Sandy Point North	45	Tolly Point	75	High Island
14	Sandy Point South	46	Under The Gums	76	Bolston Bank
15	Hackett Point	47	Thomas Point North	77	Jackass
16	Wreck Buoy	48	Thomas Point South	78	Stony Hollow
17	Sand Spit	49	Old Woman	79	Brice Fence
18	Whitehall Creek	50	Ruler Flats	80	Cheston Point
19	Whitehall	51	Swan Reef	81	Potato Hill
20	Inside Greenbury Point	52	Hill Point East	82	Barren Neck
21	Old Fort	53	Hill Point (Severn River)	83	Tucker
22	Little Sandy	54	Fox Point	84	Cedar Point (West River)
23	Creces Cove	55	Thunder and Lightning.	85	Collins Flats
24	Ferry Point	56	Aberdeen	86	Curtis
25	Peach Orchard	57	Duvall	87	Three Sisters
26	Traces Hollow	58	Beard Point	88	Bay Shore
27	Rock Point Lower	59	Rough Point	89	Long (Chesapeake Bay)
28	Chase	60	Almshouse	90	Fairhaven
29	Point (Severn River)	61	Brewer (South River)	91	Holland Point (Chesapeake Bay)
30	Aisquith Creek	62	Purdy Flats		
31	Arnold Point				
32	Rock Point Upper				

BALTIMORE COUNTY.

1	Tea Table	2	Millers Island	3	Man-O'-War Shoals
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SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

NUMERICAL INDEX TO NATURAL OYSTER BARS—Continued.

CALVERT COUNTY.

County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar
1	Hog Point	16	Old Lump	29	Island Creek (Patuxent River)
2	Upper Steps	17	Light House Lump	30	Broome Island
3	Lower Steps	18	Southeast Middle-ground (Patuxent River)	31	Parkers Wharf
4	Plum Point	19	Swash	32	Jacks Bay
5	Daddie Dare	20	Shell File	33	Jacks Marsh
6	Governors Run	21	Cherry Tree (Patuxent River)	34	Prison Point
7	Emanuel	22	Sandy Point Lumps	35	Kitts Marsh
8	Flag Pond	23	Back of Island	36	Thomas (Calvert County)
9	Cove Point Bight	24	Barn Gates	37	Broad Neck (Calvert County)
10	Little Cove Point	25	Hungerford Hollow	38	Macks Hollow
11	Parker Moore	26	Hellen	39	Buzzard Island
12	Under The Cliffs	27	Mears (Calvert County)	40	Holland Point (Patuxent River)
13	Chinese Muds (Calvert County)	28	Peterson (Calvert County)	41	Spout
14	Simmons				
15	Carroll Muds (Calvert County)				

CHARLES COUNTY.

1	Teague	7	Joels Lumps	11	Charleston Creek
2	Elbow	8	Windmill (Wicomico River)	12	Lancaster
3	Carpenters Yard	9	Fenwick	13	Rock Point (Wicomico River)
4	Stoddard	10	Wicomico Middle-ground	14	Shipping Point
5	Wicomico Lumps			15	Cobb Point
6	Mills West				

DORCHESTER COUNTY.

1	Drum Point (Choptank River)	20	Logans Hill	39	Hudson (Little Choptank River)
2	Cabin Creek Entrance	21	Todd Point	40	Ross
3	Cabin Creek (Choptank River)	22	Cook Point	41	Butterpot
4	Tanners Patch	23	Red Buoy	42	McKells Point
5	Dixon	24	Spedden	43	Town
6	Oyster Shell Point	25	Diamond (Chesapeake Bay)	44	Cherry Island
7	States Bank	26	Dupont	45	Brumell
8	Shoal Creek	27	Brannock	46	Jones (Little Choptank River)
9	Green Marsh	28	Mill Point (Chesapeake Bay)	47	Pattison
10	Hambrooks	29	Hills Point (Chesapeake Bay)	48	Barn Point
11	Turtle Back (Choptank River)	30	Hills Point North	49	Saltwork (Little Choptank River)
12	Sandy Hill Lumps	31	Hills Point South	50	Fishing Creek
13	Sandy Hill	32	Peanut Hill	51	Grapevine
14	Commander	33	Cow Island	52	Tobacco Stick
15	Horn Point (Choptank River)	34	Bald Eagle (Little Choptank River)	53	Susquehanna
16	Le Compte	35	Ragged Point Flats	54	Along Shore
17	Castle Haven Creek	36	Ragged Point	55	Hooper
18	Castle Haven	37	Little Pollard	56	Slaughter Creek
19	Corners Wharf	38	Cason	57	Bridge
				58	Nine Acres

NUMERICAL INDEX TO NATURAL OYSTER BARS—Continued.

DORCHESTER COUNTY—Continued.

County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar
59	Little Choptank	78	Boundary	100	Ware Sands
60	Henpeck	79	Holland Straits	101	Sand Shoal
61	Cators	80	Mud (Dorchester County)	102	Evans (Fishing Bay)
62	Granger	81	Jane	103	Goose Creek
63	Oyster Creek (Little Choptank River)	82	Bell Buoy	104	Old House
64	Marshall	83	Red Sector	105	Thorough
65	James Point	84	Bloodsworth	106	Flat Rock
66	Travers	85	Hopkins Cove	107	Half Way Mark
67	Punch Island Creek	86	Applegarth	108	Hill
68	Stone File	87	Norman	109	Point (Fishing Bay)
69	Tar Bay	88	Lower Thoroughfare	110	Bungay
70	White Wood	89	Crab Point	111	Duck Island
71	New Discovery	90	Paul	112	Clay Island
72	Horse Point Channel	91	Windmill (Honga River)	113	Sharkfin Shoal
73	Ware (Chesapeake Bay)	92	Hickory	114	Frog Point
74	Richland	93	Lakes Cove	115	New
75	Hooper Strait	94	Dark Point	116	Hills and Holes
76	Northwest Middle-ground	95	Smoke Point	117	Roaring Point West
77	Southeast Middle-ground (Chesapeake Bay)	96	Wroten Island	118	Bean Shoal
		97	Gum	119	Outer Hole
		98	Peanut	120	Lower Newfoundland
		99	Tubbmans Drain	121	Upper Newfoundland

KENT COUNTY.

1	Phoenix Shoal	25	Wickes Beach	45	Boat House
2	Deep Shoal	26	Dredge Rock	46	Drum Point (Langford Creek)
3	Coal Lump	27	Side Shoal	47	Davis Creek
4	Tolchester Lump	28	Mud (Chester River)	48	Island Point
5	Mitchells Bluff Buoy	29	Ferry (Kent County)	49	Eagle Point (Langford Creek)
6	Gales Lumps	30	Buoy Rock	50	Wilsons Point
7	Hodges	31	Hail Creek	51	Kings Creek
8	Swan Point	32	Hail Point	52	Bailey
9	Tavern Creek	33	Black Buoy (Chester River)	53	Philips
10	Little Neck (Swan Creek)	34	Durbin	54	Ware (Langford Creek)
11	Deep Landing Hole	35	Belts	55	Ebb Point
12	White Horse	36	Piney Point (Kent County)	56	Cliff
13	The Haven	37	Bay Bush Point	57	Commegys Bight
14	Rockhall	38	Bluff Point (Chester River)	58	Sheep (Kent County)
15	Swan Creek	39	Chester River Middle-ground	59	Deep Point
16	Windmill Flats	40	Limekiln	60	Shippen Creek
17	Muddy Drain	41	Willow Bottom	61	Haddaway
18	Huntingfield	42	Nichols	62	Hollyday (Kent County)
19	Gum Spring	43	Hudson (Chester River)	63	Melton Point
20	Under The Bar	44	Sand Thistle	64	Northwest (Kent County)
21	White Marsh				
22	Hickory Thicket				
23	East Neck Bay				
24	Entrance Lumps				

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

NUMERICAL INDEX TO NATURAL OYSTER BARS—Continued.

QUEEN ANNES COUNTY.

County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar
1	North west (Queen Annes County)	33	Kent Point	67	Walter White
2	Booker Wharf	34	Long Point (Eastern Bay)	68	Hog Island (Prospect Bay)
3	Holly day (Queen Annes County)	35	Bodkin Shoals	69	Sandy Point (Prospect Bay)
4	Mummys Cove	36	Brick House Hill	70	Buckhorn
5	Sheep (Queen Annes County)	37	Bunker Hill	71	Well Cove
6	Emory Hollow	38	Wild Ground (Eastern Bay)	72	Prospect
7	Spaniard Point	39	Pine Tree	73	Hood
8	Holton Point	40	Shipping Creek	74	Cabin Creek (Prospect Bay)
9	Town Point (Corsica River)	41	Greeves Cove	75	Saw Mill Creek
10	Earle Cove	42	Mattapex	76	Mill Hill
11	Emory Wharf	43	Batts Neck	77	Bugby
12	Ship Point	44	Ringold Middleground	78	Greenwood Creek
13	Possum Point	45	Erickson Sands	79	Prospect Point
14	Old Field	46	Pea Hill	80	Coffee
15	Robins Cove	47	Stevens	81	Persimmon Tree
16	Reeds	48	Jones Hole	82	Shippen Hole
17	Hells Delight	49	Pond Marsh	83	Mills
18	Piney Point (Queen Annes County)	50	Island Cove	84	Hobbs
19	Horse Race	51	Rooks	85	Baxters Hollow
20	Carpenter Island	52	Thompsons	86	Paca
21	Poplar	53	Middle Block	87	Bryan (Wye River)
22	Blunt	54	Turkey Point (Eastern Bay)	88	Wye Island
23	Long Point (Chester River)	55	Bodkin Island	89	Drum Point (Wye River)
24	Flood Point	56	Cox Neck	90	Wye River Middle-ground.
25	Kent Island Narrows	57	Cedar Island	91	Hess
26	Ferry (Queen Annes County)	58	Johnson Island	92	Stone Wharf
27	Carvel	59	Crab Alley Lumps	93	Race Horse (Queen Annes County)
28	Strong Bay	60	Normans Fine Eyes	94	Whetstone
29	Love Point	61	Parsons Island	95	Melvin
30	Broad Creek	62	Bald Eagle (Eastern Bay)	96	Dividing
31	Brick House	63	Parsons Island Narrows	97	Shawns Wharf
32	Gum Thicket	64	Normans Marsh	98	Granary Point
		65	Bibby		
		66	Dominion		

ST. MARYS COUNTY.

1	Brooks Shallows	10	Peterson (St. Marys County)	19	La Grande
2	Sothoron	11	Neale	20	Millstone
3	Broad Neck (St. Marys County)	12	Mears (St. Marys County)	21	Deep Point Mud
4	Thomas (St. Marys County)	13	Half Pone	22	Carroll Muds (St. Marys County)
5	Sandgates	14	Hawks Nest	23	Hog Island (Patuxent River)
6	Upper Forrest	15	Bob Wise	24	Chinese Muds (St. Marys County)
7	Lower Forrest	16	Spencers	25	Cedar Point Hollow
8	Gatton	17	Town Creek	26	Rocky Beach
9	Captain Point	18	Goodwin		

NUMERICAL INDEX TO NATURAL OYSTER BARS—Continued.

ST. MARYS COUNTY—Continued.

County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar
27	Tenacres	61	Thompson Creek	92	St. Clement Entrance
28	McKay	62	Carthagena Creek	93	Newtown Flats
29	Fish Hawk	63	Coad	94	Chapel Point
30	St. Jerome	64	Edmund	95	Abell
31	Shaving Pile	65	Middleground Lump	96	Reed Point
32	Butler	66	Cherry (St. Marys River)	97	Guest Marshes
33	Point Look-in	67	St. George	98	Harry Jacks
34	Point Lookout	68	Hurdle	99	Mileys Creek
35	Old Hare	69	Goose Point (St. George River)	100	Bluff Woods
36	Smith Creek	70	Island Shore	101	Cancee Creek
37	Dunbar	71	Milbourne Shore	102	Old Wreck
38	Jutland	72	Straits	103	Horse
39	Graves	73	Tarkill	104	Dukehart Channel
40	Sedge Point	74	Swan	105	Waterloo
41	Chicken Cock	75	Rollin	106	Silver Spring
42	Fort	76	Cedar Point (St. George River)	107	Hackley Creek
43	Langley Hollow	77	Shehan	108	St. Catherine
44	Priest	78	Long (St. George River)	109	Bullock Island
45	Raleys Shore	79	Chadwick	110	Bullock
46	Jones (St. Marys River)	80	Heron Island Reef	111	Mouth of River
47	St. Inigoes South	81	Heron Island Sound	112	St. Margaret
48	St. Inigoes North	82	Black Walnut (Bretons Bay)	113	Bluff Point (Wicomico River)
49	Kennedy	83	Gough	114	Blakistone
50	Rosecroft Hollow	84	Lovers Point	115	White Point Hollow
51	Gravelly Run	85	Mouldy Creek	116	White Point
52	Seminary	86	Island	117	Bramleigh Creek
53	Horseshoe (St. Marys River)	87	Paw Paw Hollow	118	Manahowic Creek
54	Bryan (St. Marys River)	88	Stony	119	Russell
55	Short Point	89	Railway	120	Mills East
56	Biscoe	90	Bretons Bay	121	Chaptico Lumps
57	Pagan	91	Blue Sow	122	Cohouck
58	West St. Marys			123	Key
59	Cooper Creek			124	Mouth of Creek
60	Coppage				

SOMERSET COUNTY.

1	Mount Vernon Wharf	14	Piney Island Swash	27	Stone (Pocomoke Sound)
2	Wingate	15	Georges	28	Watkins
3	Buoy	16	Sandy Point (Manokin River)	29	Long Point (Pocomoke Sound)
4	Evans (Wicomico River)	17	Cornal	30	Gunby
5	Rock Creek	18	Marshy Island	31	Marumsc
6	Halls Point	19	Drum Point (Manokin River)	32	Kitts Creek West
7	Haines	20	Prickly Point	33	Kitts Creek East
8	Old Orchard (Tangier Sound)	21	Piney Island East	34	Oyster Creek (Kedge Straits)
9	Mud (Somerset Co.)	22	Harris	35	Kedge Straits
10	Turtle Egg Island	23	Big Annemessex	36	Southwest Middle-ground
11	Chain Shoal	24	Philibys	37	Church Creek
12	Mussel Hole	25	Great Rock		
13	Piney Island West	26	Fox Island		

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

NUMERICAL INDEX TO NATURAL OYSTER BARS—Continued.

TALBOT COUNTY.

County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar
1	Juniper	43	Clay Bank	86	Fox
2	Poplar Point	44	Sharp	87	Royston
3	Winders Bank	45	Black Walnut (Big Choptank River)	88	Irish Creek
4	Race Horse (Talbot County)	46	Sands	89	Choptank Lumps
5	Shaw Bay Hill	47	Pleasant Hill	90	Benoni
6	Bruffs Island	48	Church Hill	91	Light House
7	Wye Town	49	Wild Cherry Tree	92	Bachelor Point
8	Herring Island	50	Tilghman Wharf	93	Fox Hole
9	East End	51	Change	94	Stone Church
10	Sycamore	52	Eagle Point (Harris Creek)	95	Town Point (Tred Avon River)
11	Wild Ground (Miles River)	53	Turkey Neck	96	Stewart Island
12	Second Point	54	Mill Point (Harris Creek)	97	Goose Neck
13	Gibsons Flats	55	Hunts	98	Pecks Point
14	Long Point (Miles River)	56	Seths Point	99	Mares Point
15	Cox	57	Lodges	100	Louis Cove
16	Barnett	58	Walnut	101	Bamings Cove
17	Bazzles Hill	59	Smith Point	102	Old House Point
18	Old Orchard (Miles River)	60	Little Neck (Harris Creek)	103	Trippe
19	Ash Craft	61	Rabbit Island	104	Bakers Cove
20	Deep Water Point	62	Upper Harris Creek	105	Marshy
21	Scotland	63	Turnrow	106	Flatty
22	Tidemill	64	Great Marsh	107	Orem
23	Hambleton	65	France	108	Double Mills
24	West End	66	Dawson	109	Johnston
25	Hambleton Hill	67	Long Point Woods	110	Camden Point
26	Bozman Neck	68	Great Bar	111	Watermelon Point
27	Sea Turtle	69	Brown	112	Back Shore
28	Turtle Back (Miles River)	70	Deep Neck	113	Hopkins
29	Horseshoe (Miles River)	71	Mulberry Point	114	Willis
30	Aldridges Discovery	72	Well Point	115	Island Creek (Choptank River)
31	Upper Hill	73	Pompes	116	Matthews
32	Tilghmans Point.	74	Coopers Point	117	Chlora Point
33	Rich Neck	75	Judys Point	118	Beacons
34	Sedge Marsh (Tred Avon River)	76	Brushy Point	119	La Trappe
35	Wades Point	77	Willey's Island Flats	120	Howells Point
36	Marys Delight	78	Holland Point (Broad Creek)	121	Dinkinson
37	Lows Point	79	Harrison	122	Kirby
38	Poplar Island	80	Broad Creek Middle-ground	123	Scraping Line
39	Poplar Island Narrows	81	Cedar Point (Broad Creek)	124	Bolingbroke Sand
40	Bay Hundred	82	Drum Point (Broad Creek)	125	The Black Buoy (Choptank River)
41	Pone	83	Joe Harris Flats	126	Sugar Loaf
42	Stone (Chesapeake Bay)	84	Pin Cushion	127	Chancellor Point
		85	Willeys Island	128	British Harbour
				129	Goose Point (Choptank River)
				130	Mill Dam
				131	Jamaica Point
				132	Spar Buoy

NUMERICAL INDEX TO NATURAL OYSTER BARS—Continued.

WICOMICO COUNTY.

County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar	County index number indicating oyster bars on Index Chart	Name of oyster bar
1	Upper Stake	7	Long Shoal	12	Big Hill
2	Wetipquin	8	Cherry Tree (Nanti-	13	Great Shoals
3	Sand Lump		coke River)	14	Ingram Shoal
4	Hickory Nut	9	Wilson Shoals	15	Holland
5	Old Womans Patch	10	Roaring Point East		
6	Cedar Shoal	11	Middleground		

WORCESTER COUNTY.

1	South Point	11	Purnell Hammock	20	Kennel
2	Handys Hammock	12	Diamond (Chinco-	21	Big Bay Point
3	Newport		teague Bay)	22	Toby
4	Lambertson Landing	13	Beef Creek	23	Deep Water
5	Ennis	14	Rattlesnake	24	Striking Marsh
6	Turpin	15	Martin Point	25	Levin Tump
7	Sandy Point (Chinco-	16	Easter Cove	26	White Rock
	teague Bay)	17	Mink Tump	27	Horsehead North
8	Robins Marsh	18	Sheep (Chincoteague	28	Horsehead South
9	Scarboro Creek		Bay)		
10	Southwest	19	Drum		

CRAB BOTTOMS.

ALPHABETICAL INDEX.

NOTE.—See Numerical Index for names of crab bottoms corresponding to numbers on Index Chart.

Name of crab bottom	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
		° /	° /				
Adam Island	42	38 09	76 05	Dorchester	3	170	193
Apes Hole	9	37 57	75 48	Somerset	38	110	151
Back Creek	9	37 59	75 52	Somerset	29	104	151
Big Island	9	37 58	75 59	Somerset	39	101	151
Bishop Head	41	38 13	76 02	Dorchester	14	167	193
Bloodsworth Island	41, 42	38 11	76 02	Dorchester	7	168	193
Broad Creek	9	37 55	75 51	Somerset	36	108	151
Cancer	9	37 59	75 52	Somerset	28	104	151
Cedar Straits	9	37 55	75 54	Somerset	35	108	151
Colburn	7	38 04	75 47	Somerset	21	98	151
Crane Cove	7	38 04	75 49	Somerset	17	96	151
Daugherty Creek	7	38 02	75 51	Somerset	24	99	151
Deal Island	5, 7	38 08	75 58	Somerset	2	83	152
Deep Banks	5, 6, 7	38 08	76 02	Somerset	46	81	152
Drum	9	38 00	75 58	Somerset	40	102	151
Duck Point Cove	40	38 16	76 06	Dorchester	12	166	193
Fishing Creek	9	37 56	75 54	Somerset	34	107	151
Fishing Point	6, 7	38 02	76 00	Somerset	42	88	152
Fords Wharf	7	38 04	75 50	Somerset	16	95	151
Fox Creek	40	38 18	76 07	Dorchester	10	165	193
Geanquakin	5, 7	38 09	75 51	Somerset	10	85	152
Goose Creek	7	38 06	75 52	Somerset	12	93	151
Grassy	40, 41	38 12	76 03	Dorchester	8	167	193
Great Cove	41, 42	38 10	76 01	Dorchester	6	169	193
Great Point	9	37 57	75 54	Somerset	33	107	151
Hazard	7	38 04	75 53	Somerset	14	94	151
Holland Island	42	38 07	76 05	Dorchester	2	171	193
Holland Straits	5, 6, 7	38 09	76 01	Somerset	45	82	152
Jackson Island	7	38 03	75 50	Somerset	22	98	151
Jenkins Creek	9	37 57	75 52	Somerset	31	105	151
Jenny Island	40, 41	38 14	76 04	Dorchester	13	166	193
Jones Creek	7	38 02	75 50	Somerset	23	99	151
Kings Island	9	37 57	75 53	Somerset	32	106	151
Lavellette	9	37 58	75 52	Somerset	30	105	151
Laws Thoroughfare North	5	38 10	75 57	Somerset	1	83	152
Laws Thoroughfare South	5, 7	38 08	75 55	Somerset	7	84	152
Light House	9	37 58	75 53	Somerset	27	103	151
Little Deal Island	7	38 07	75 56	Somerset	4	91	151
Lower Thoroughfare	7	38 07	75 56	Somerset	6	91	151
Marsh Island	5, 7	38 08	75 53	Somerset	8	84	152
Miles	7	38 04	75 47	Somerset	20	97	151

ALPHABETICAL INDEX TO CRAB BOTTOMS—Continued.

Name of crab bottom	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location.		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
Mine Creek	7	38 05	75 53	Somerset	13	94	151
Moon Bay	7	38 04	75 48	Somerset	18	96	151
Northeast Island	42	38 09	76 04	Dorchester	4	169	193
North Kedge Straits	6	38 05	76 03	Somerset	49	87	152
Okahanikan	40, 41, 42	38 12	76 04	Dorchester	9	167	193
Old House	9	37 58	75 53	Somerset	26	102	151
Piney Island	7	38 06	75 55	Somerset	5	92	151
Pry Cove	6	38 06	76 03	Somerset	48	86	152
Pry Island	42	38 07	76 04	Dorchester	1	172	193
Pungers Creek	5, 6, 7	38 07	76 01	Somerset	44	82	152
Red Cap Creek	7	38 05	75 47	Somerset	19	97	151
Shanks Creek	8	37 58	76 02	Somerset	53	100	151
Shark Point	7	38 04	75 52	Somerset	15	95	151
Sheepshead	6, 7	38 04	76 02	Somerset	50	87	152
Smith Island Thor- oughfare	6, 8, 9	38 00	76 03	Somerset	52	89	151
South Kedge Straits	6	38 02	76 02	Somerset	51	88	152
South Marsh	7	38 05	76 00	Somerset	43	90	151
Spring Island (Dorchester Co.)	42	38 08	76 03	Dorchester	5	170	193
Spring Island (Somerset Co.)	6	38 07	76 03	Somerset	47	86	152
St. Pierre	5, 7	38 08	75 52	Somerset	9	85	152
Teague Creek	7	38 07	75 50	Somerset	11	93	151
Tenth Point	7	38 02	75 51	Somerset	25	100	151
Terrapin Sand	7, 9	38 01	75 58	Somerset	41	89	151
Tylers Creek	8, 9	37 58	76 01	Somerset	54	101	151
Ware Point	9	37 56	75 49	Somerset	37	109	151
Wenona	7	38 07	75 57	Somerset	3	90	151
Wingate	40	38 17	76 06	Dorchester	11	165	193

CRAB BOTTOMS.

NUMERICAL INDEX.

NOTE.—See Alphabetical Index for other references relating to crab bottoms.

DORCHESTER COUNTY.

County index number indicating crab bottoms on Index Chart	Name of crab bottom	County index number indicating crab bottoms on Index Chart	Name of crab bottom	County index number indicating crab bottoms on Index Chart	Name of crab bottom
1	Pry Island	6	Great Cove	12	Duck Point Cove
2	Holland Island	7	Bloodsworth Island	13	Jenny Island
3	Adam Island	8	Grassy	14	Bishop Head
4	Northeast Island	9	Okahanikan		
5	Spring Island (Dorchester County)	10	Fox Creek		
		11	Wingate		

SOMERSET COUNTY.

1	L a w s Thoroughfare North	19	Red Cap Creek	39	Big Island
2	Deal Island	20	Miles	40	Drum
3	Wenona	21	Colburn	41	Terrapin Sand
4	Little Deal Island	22	Jackson Island	42	Fishing Point
5	Piney Island	23	Jones Creek	43	South Marsh
6	Lower Thoroughfare	24	Daugherty Creek	44	Pungers Creek
7	L a w s Thoroughfare South	25	Tenth Point	45	Holland Straits
8	Marsh Island	26	Old House	46	Deep Banks
9	St. Pierre	27	Light House	47	Spring Island (Somerset County)
10	Geanquakin	28	Cancer	48	Pry Cove
11	Teague Creek	29	Back Creek	49	North Kedge Straits
12	Goose Creek	30	Lavellette	50	Sheepshead
13	Mine Creek	31	Jenkins Creek	51	South Kedge Straits
14	Hazard	32	Kings Island	52	Smith Island Thoroughfare
15	Shark Point	33	Great Point	53	Shanks Creek
16	Fords Wharf	34	Fishing Creek	54	Tylers Creek
17	Crane Cove	35	Cedar Straits		
18	Moon Bay	36	Broad Creek		
		37	Ware Point		
		38	Apes Hole		

CLAM BEDS.

ALPHABETICAL INDEX.

NOTE.—See Numerical Index for names of clam beds corresponding to number on Index Chart.

Name of clam bed	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which boundaries are defined	Page of Fourth Report of Maryland Shell Fish Commission on which characteristics are described
		Latitude	Longitude				
Flat Rock	9, 10	37° 56'	75° 47'	Somerset	3	112	152
Gravel Rock	9	37° 55'	75° 48'	Somerset	2	111	152
Ware Rock	9	37° 35'	75° 48'	Somerset	1	111	152

NUMERICAL INDEX.

NOTE.—See Alphabetical Index for other references relating to clam beds.

SOMERSET COUNTY.

County index number indicating clam beds on Index Chart	Name of clam bed	County index number indicating clam beds on Index Chart	Name of clam bed	County index number indicating clam beds on Index Chart	Name of clam bed
1	Ware Rock	2	Gravel Rock	3	Flat Rock

LANDMARKS.

U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS.

ALPHABETICAL INDEX.

NOTE.—See Numerical Index for names of triangulation stations corresponding to numbers on Index Chart.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Aber	32	38 48	76 11	Talbot	29	66
Adam	37	38 33	76 11	Dorchester	49	71
Adams	24	38 08	76 29	St. Marys	109	87
Albert	32	38 52	76 10	Queen Annes	116	92
All	34	38 43	76 07	Talbot	211	127
Aller	32	38 54	76 10	Queen Annes	106	88
Alley	32	38 56	76 15	Queen Annes	79	77
Almshouse	3	38 56	76 32	Anne Arundel	82	92
Almshouse (Lighting Rod)	3	38 56	76 32	Anne Arundel	81	92
Alpha	3	38 52	76 32	Anne Arundel	96	96
Amour	29	38 43	76 16	Queen Annes	41	33
Annette	34	38 43	76 16	Talbot	123	93
Ansley	34	38 46	76 14	Talbot	157	105
Apple	3	38 50	76 32	Anne Arundel	101	98
Applegarth	40	38 14	76 08	Dorchester	93	87
Ar	41	38 19	75 55	Dorchester	128	98
Arbuckle	24	38 09	76 30	St. Marys	99	91
Arnold	2	39 02	76 32	Anne Arundel	42	80
Arundel	3	38 55	76 28	Anne Arundel	70	88
Asbury Church	9	37 58	75 50	Somerset	45	49
Ash	30	39 08	76 10	Kent	55	66
Ashland	30	39 07	76 06	Queen Annes	12	53
Asquith	40	38 17	76 09	Dorchester	107	90
Assateague Light	(¹)	37 55	75 21	Virginia	23	¹ 40
Attila	32	38 52	76 10	Queen Annes	118	93
Austin	37	38 32	76 11	Dorchester	61	76
Avalon	33	38 43	76 20	Talbot	89	80
Aye	34	38 44	76 08	Talbot	202	123
Bach	34, 35	38 41	76 11	Talbot	224	132
Back	37	38 33	76 15	Dorchester	36	66
Bailey	26	38 14	76 47	St. Marys	168	126
Bald	34	38 45	76 15	Talbot	136	97
Baldwins	32	38 52	76 10	Talbot	12	58
Ball (Wicomico River)	5	38 14	75 51	Somerset	5	35
Ball (Harris Creek)	33	38 45	76 18	Talbot	119	86
Baltimore Light	(²)	39 04	76 24	Anne Arundel	6	² 32
Bank (Magothy River)	2	39 05	76 31	Anne Arundel	16	71
Bank (Swan Creek)	28, 29	39 09	76 16	Kent	5	31
Bank (St. Clement Bay)	25	38 16	76 43	St. Marys	147	110

¹ See Worcester County publication.

² See Queen Annes County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Bank (Tred Avon River)	35	38 37	76 00	Talbot	263	158
Bar (Tangier Sound)	5, 7	38 08	75 58	Somerset	13	38
Bar (Harris Creek)	33	38 41	76 19	Talbot	87	79
Bar (Sinepuxent Bay)	13	38 16	75 08	Worcester	15	32
Barber (Wicomico River)	26	38 23	76 51	St. Marys	181	116
Barber (Tred Avon River)	35	38 36	76 01	Talbot	259	157
Bareda House Cupola	20	38 19	76 26	Calvert	18	55
Barn	7	38 08	75 48	Somerset	30	44
Barnett	34	38 46	76 11	Talbot	62	149
Bars	19	38 23	76 32	St. Marys	11	47
Bateman	34	38 45	76 07	Talbot	196	121
Bath	30	39 05	76 07	Queen Annes	22	46
Battle	19	38 27	76 37	Calvert	39	42
Batts	31	38 55	76 19	Queen Annes	53	66
Bay (Magothy River)	1	39 06	76 27	Anne Arundel	11	68
Bay (Severn River)	2	39 02	76 33	Anne Arundel	49	82
Bay Bush Point	30	39 03	76 13	Kent	23	46
Bay Ridge Stack	3	38 56	76 27	Anne Arundel	66	87
Bay Side	2	39 01	76 24	Anne Arundel	26	75
Bayly	37	38 33	76 15	Dorchester	37	67
Beach (Chesapeake Bay)	16	38 40	76 32	Calvert	2	27
Beach (Sinepuxent Bay)	13	38 17	75 07	Worcester	11	30
Beacon	9	37 55	75 54	Virginia	8	150
Beacon Clumps	14	38 08	75 12	Worcester	28	37
Beak	32	38 48	76 11	Talbot	33	68
Beau	25	38 16	76 38	St. Marys	121	98
Beckwith	37	38 34	76 12	Dorchester	44	70
Bee	32	38 54	76 10	Queen Annes	102	86
Beg	34	38 46	76 10	Talbot	39	141
Belle	25	38 16	76 39	St. Marys	130	96
Bellevue	34	38 42	76 11	Talbot	180	115
Bello	24	38 11	76 27	St. Marys	88	78
Ben	20	38 18	76 28	St. Marys	19	58
Bend	24	38 12	76 26	St. Marys	75	81
Bengal	34	38 46	76 15	Talbot	139	98
Benn	32	38 51	76 12	Queen Annes	89	81
Benoni 2	34	38 40	76 12	Talbot	177	114
Bentley	40	38 18	76 11	Dorchester	99	88
Berry	34, 35	38 40	76 09	Talbot	242	139
Bethel	34	38 47	76 08	Talbot	54	145
Between	24	38 07	76 26	St. Marys	55	70
Beverly	34	38 46	76 14	Talbot	155	104
Bight	2	39 02	76 32	Anne Arundel	41	80
Bill	30	39 09	76 05	Queen Annes	6	58
Billiard	19	38 29	76 40	St. Marys	2	38
Birch	13, 14	38 13	75 12	Worcester	22	35
Bird	30	39 04	76 10	Queen Annes	31	41
Bivalve Church	11	38 18	75 53	Wicomico	4	26
Black	33, 36	38 40	76 20	Talbot	84	78
Black Beacon	35	38 37	76 07	Talbot	252	153
Blakeford	30	39 00	76 10	Queen Annes	35	37
Blakistone	26	38 17	76 48	St. Marys	172	123
Blakistone Island Light	25	38 12	76 45	St. Marys	163	105

¹ See Somerset County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Blanco	34	38 44	76 16	Talbot	128	95
Blank	(1)	39 10	76 02	Kent	92	88
Blind	35	38 38	75 59	Talbot	265	159
Bloody Point Bar Light	31	38 50	76 24	Queen Annes	46	63
Blossom	34	38 44	76 07	Talbot	200	123
Bluebeard	30	38 59	76 11	Queen Annes	36	37
Bluff (Severn River)	2	38 59	76 28	Anne Arundel	34	77
Bluff (Magothy River)	2	39 04	76 27	Anne Arundel	8	70
Bodkin Point (Old Tower)	1	39 08	76 25	Anne Arundel	3	68
Boling	35	38 35	76 02	Talbot	256	155
Bon	20	38 19	76 27	Calvert	19	54
Bonnet	32	38 56	76 14	Queen Annes	86	79
Booker	30	39 08	76 04	Queen Annes	9	56
Boone	34, 35	38 40	76 10	Talbot	225	132
Borough	34	38 42	76 09	Talbot	217	129
Bowman	26	38 20	76 52	Charles	10	27
Bozman	34	38 46	76 16	Talbot	112	91
Bozman M. E. Church Spire	34	38 46	76 16	Talbot	113	91
Bramble	28	39 15	76 13	Kent	2	29
Brannock	36, 37	38 35	76 16	Dorchester	29	56
Break	30	39 02	76 10	Queen Annes	34	38
Brewer (Severn River)	2	39 02	76 32	Anne Arundel	50	83
Brewer (South River)	3	38 57	76 33	Anne Arundel	80	91
Brian Reference Station	32	38 56	76 13	Queen Annes	87	80
Brinary	33	38 46	76 18	Talbot	97	83
Brice	2	39 00	76 29	Anne Arundel	35	78
Bridge (Honga River)	39, 40	38 18	76 12	Dorchester	100	87
Bridge (Kent Island Narrows)	29, 32	38 58	76 15	Queen Annes	83	36
Brief	24	38 12	76 27	St. Marys	82	83
Briscoe	20	38 22	76 30	St. Marys	13	49
Broad (Chesapeake Bay)	4	38 47	76 31	Anne Arundel	107	100
Broad (Chester River)	(2)	39 09	76 04	Kent	87	85
Broine	24	38 11	76 26	St. Marys	72	80
Brooks	37	38 32	76 12	Dorchester	63	77
Brown	30	39 06	76 09	Kent	75	75
Bruffs	32	38 52	76 12	Talbot	18	61
Buena	19	38 32	76 39	Calvert	46	34
Buffing	13	38 19	75 07	Worcester	5	27
Buffington Windmill	13	38 19	75 07	Worcester	6	28
Bungay	30	39 09	76 11	Kent	48	63
Bur	20	38 20	76 29	Calvert	26	51
Burns	30	39 08	76 05	Queen Annes	11	54
Burr	26	38 21	76 52	Charles	9	26
Bush	32	38 53	76 08	Queen Annes	128	97
But	32	38 48	76 12	Talbot	28	65
Buzz	19	38 29	76 39	Calvert	43	38
Buzzard	25	38 17	76 38	St. Marys	128	94
Cabin	34	38 45	76 15	Talbot	134	97
Cable	20	38 19	76 29	St. Marys	16	52
Cain	20, 21	38 17	76 23	St. Marys	24	58
Cake	30	39 09	76 04	Queen Annes	7	57

¹ See progress map in Kent County publication.² See Worcester County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
Calf	3	38 53	76 32	Anne Arundel	91	95
Calvert Monument	24	38 11	76 26	St. Marys	73	81
Cam	34	38 43	76 07	Talbot	212	127
Cambridge	35	38 35	76 05	Dorchester	16	50
Cambridge Stand Pipe	35	38 34	76 05	Dorchester	15	50
Camden	34	38 45	76 07	Talbot	199	122
Can	36, 37, 38	38 30	76 18	Dorchester	81	59
Canoe	25	38 15	76 41	St. Marys	161	107
Carrie	37	38 33	76 15	Dorchester	38	67
Carroll 2	20	38 18	76 25	St. Marys	21	56
Castle	35	38 38	76 10	Dorchester	24	53
Catholic Church Cross	20	38 20	76 28	Calvert	24	52
Catholic Church Cross (Benedict)	26	38 31	76 41	Charles	4	37
Catholic Church Cross (Newtown Neck)	25	38 15	76 42	St. Marys	143	108
Catholic Church Spire (Annapolis)	2	38 58	76 29	Anne Arundel	60	85
Cato	3	38 52	76 31	Anne Arundel	88	94
Caulk	34	38 45	76 16	Talbot	130	95
Cecil	25	38 17	76 43	St. Marys	148	112
Cedar (South River)	3	38 56	76 32	Anne Arundel	83	92
Cedar (Severn River)	2	39 04	76 34	Anne Arundel	45	81
Cedar (Bretons Bay)	25	38 16	76 38	St. Marys	124	95
Cedar (Broad Creek)	34	38 44	76 14	Talbot	166	109
Cedar Point Light	20, 39	38 18	76 22	St. Marys	23	58
Cedonk	25	38 14	76 41	St. Marys	114	104
Chadwick	24	38 10	76 31	St. Marys	102	92
Chalk	3	38 50	76 32	Anne Arundel	99	97
Chan	24	38 10	76 27	St. Marys	70	78
Chancellor	35	38 35	76 02	Talbot	258	156
Change 1910	33, 34	38 43	76 18	Talbot	121	86
Chap	32	38 48	76 07	Talbot	50	70
Chapel	25	38 16	76 42	St. Marys	144	108
Charles (Wicomico River)	26	38 17	76 50	Charles	14	30
Charles (Honga River)	40	38 19	76 10	Dorchester	105	89
Charles (Island Creek)	34, 35	38 40	76 08	Talbot	231	135
Chase (Severn River)	2	39 01	76 31	Anne Arundel	39	79
Chase (Whitehall Bay)	2	39 00	76 26	Anne Arundel	30	76
Chief	33, 36, 37	38 38	76 17	Dorchester	27	55
Cherry	24	38 08	76 28	St. Marys	93	86
Cherry Cove	25	38 16	76 41	St. Marys	135	100
Cherry Island Water Tank	37	38 34	76 13	Dorchester	45	70
Ches	3	38 52	76 31	Anne Arundel	95	96
Chester (Chester River)	30	39 06	76 07	Queen Annes	15	51
Chester (Virginia)	(¹)	37 57	75 26	Virginia	21	¹ 41
Chestnut	24	38 10	76 25	St. Marys	63	76
Chew	32	38 53	76 08	Talbot	4	55
Chief	35	38 35	75 59	Dorchester	8	47
Child	12	38 15	75 50	Wicomico	13	30
Chin	32	38 54	76 10	Queen Annes	105	87
Chlora	35	38 38	76 09	Talbot	245	150
Choptank River Light	34, 35, 37	38 39	76 11	Talbot	244	140

¹ See Worcester County publication.

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS —Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Church	24	38 10	76 26	St. Marys	60	73
Church Creek (No. 1 West)	37	38 31	76 11	Dorchester	60	76
City	26	38 31	76 40	Charles	3	37
Clark	34	38 44	76 12	Talbot	163	108
Clay	30	39 09	76 09	Kent	61	68
Clem	2	39 01	76 32	Anne Arundel	51	83
Close	32	38 54	76 10	Queen Annes	103	87
Clump (Chesapeake Bay)	2	39 00	76 25	Anne Arundel	27	75
Clump (Harris Creek)	34	38 47	76 16	Talbot	105	89
Coal	34	38 44	76 15	Talbot	125	93
Cobb Point Bar Light	26	38 15	76 50	Charles	18	32
Coburns	25	38 17	76 43	St. Marys	155	113
Coffee	31	38 56	76 19	Queen Annes	56	67
Cohouck	26	38 21	76 50	St. Marys	179	118
Colburn	7	38 03	75 48	Somerset	38	46
Cole	19	38 24	76 35	St. Marys	9	45
Collier	(¹)	38 21	75 05	Worcester	38	24
Collins	19	38 28	76 40	St. Marys	4	39
Colonel	32	38 51	76 11	Talbot	16	60
Comb (Miles River)	34	38 46	76 10	Talbot	60	148
Combs (Honga River)	24	38 08	76 29	St. Marys	96	88
Command	35	38 36	76 05	Dorchester	18	51
Compton	25	38 15	76 42	St. Marys	136	102
Convent Water Tower	(¹)	38 21	75 05	Worcester	39	25
Cook	34	38 43	76 14	Talbot	168	110
Cook Point Windmill	36, 37	38 37	76 17	Dorchester	28	55
Cool	2	39 01	76 31	Anne Arundel	38	79
Coppage	24	38 10	76 28	St. Marys	89	77
Corn (Chesapeake Bay)	2	39 01	76 24	Anne Arundel	24	74
Corn (Langford Creek)	30	39 07	76 10	Kent	69	71
Corn (Bretons Bay)	25	38 17	76 38	St. Marys	125	95
Corner (Wicomico River)	26	38 16	76 50	Charles	17	32
Corner (Choptank River)	37	38 37	76 12	Dorchester	25	64
Corner (Wye River)	32	38 53	76 08	Talbot	2	55
Corpse	30	39 06	76 07	Queen Annes	14	51
Corr	28	39 10	76 15	Kent	10	32
Corsica	30	39 05	76 09	Queen Annes	18	47
Cottage (Chesapeake Bay)	3	38 55	76 28	Anne Arundel	67	87
Cottage (St. Inigoes Creek)	24	38 10	76 26	St. Marys	67	74
Counallor	3	38 51	76 32	Anne Arundel	.98	97
Cousin	32	38 52	76 10	Talbot	13	59
Cove	3	38 51	76 32	Anne Arundel	102	98
Cove Point Light	18, 20, 38	38 23	76 23	Calvert	14	32
Cow	41	38 16	75 57	Dorchester	126	97
Cox (Crab Alley Bay)	31	38 55	76 18	Queen Annes	73	74
Cox (Manokin River)	7	38 09	75 47	Somerset	28	43
Crab	41	38 11	76 01	Dorchester	96	93
Crack	34	38 42	76 07	Talbot	214	128
Craddock	20	38 18	76 27	St. Marys	20	56
Craighill Channel Light (Front Range)	27	39 11	76 24	Baltimore	2	25
Craighill Channel Light (Rear Range)	27	39 14	76 24	Baltimore	1	25

¹ See Worcester County progress map.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Crane	20	38 19	76 29	St. Marys	18	53
Crane	31	38 56	76 22	Queen Annes	45	63
Creek (Irish Creek)	34	38 42	76 13	Talbot	176	113
Creek (Wicomico River)	12	38 16	75 49	Wicomico	14	31
Cremona	19	38 27	76 39	St. Marys	5	40
Croch	41	38 15	76 02	Dorchester	115	93
Crow	30	39 03	76 10	Queen Annes	30	41
Cult	30	39 08	76 09	Kent	67	70
Cummings	33, 34	38 46	76 18	Talbot	99	84
Cup	10	37 56	75 38	Virginia	15	1 53
Cupola (Rhode River)	3	38 52	76 32	Anne Arundel	93	95
Cupola (Manokin River)	7	38 08	75 49	Somerset	31 ¹	44
Curtis	3	38 51	76 30	Anne Arundel	103	98
Cut	30	39 06	76 13	Kent	33	52
Cutoff Channel Light (Front Range)	27	39 12	76 27	Baltimore	4	26
Cutoff Channel Light (Rear Range)	27	39 13	76 28	Baltimore	6	26
Dago	24	38 07	76 24	St. Marys	40	64
Dan	33, 34	38 46	76 18	Talbot	116	84
Darce	32	38 53	76 11	Queen Annes	109	89
David	37	38 33	76 12	Dorchester	51	72
Davis	30	39 07	76 10	Kent	42	61
Day	24	38 06	76 25	St. Marys	54	69
Deal Island Church	5	38 09	75 57	Somerset	12	38
Deck	32	38 53	76 09	Talbot	7	57
Deep	24	38 11	76 27	St. Marys	85	80
Deep Cove	30	39 06	76 11	Kent	38	59
Deep Point 2	30	39 07	76 07	Kent	78	77
Deewat	32	38 48	76 13	Talbot	68	72
Delahay	34, 35	38 40	76 09	Talbot	228	134
Dell	31	38 55	76 19	Queen Annes	70	73
Delta (Rhode River)	3	38 53	76 31	Anne Arundel	89	94
Delta (Broad Creek)	34	38 46	76 16	Talbot	142	100
Desert	20, 21	38 16	76 24	St. Marys	25	58
Deux	34	38 42	76 07	Talbot	213	128
Dicks Water Tank	35	38 35	76 05	Dorchester	19	50
Divide	32	38 53	76 09	Queen Annes	123	95
Dixon	32	38 51	76 16	Talbot	73	75
Dobbins	2	39 05	76 28	Anne Arundel	13	71
Doctor (Little Choptank River)	37	38 32	76 12	Dorchester	64	77
Doctor (Miles River)	34	38 47	76 09	Talbot	56	146
Dog	34	38 47	76 17	Talbot	100	87
Dorrance	34	38 47	76 09	Talbot	45	144
Dot	37	38 38	76 14	Dorchester	26	64
Double	35	38 36	76 03	Talbot	255	155
Dove	5	38 12	75 52	Somerset	8	36
Down	30	39 09	76 04	Queen Annes	5	59
Draw	32	38 48	76 08	Talbot	49	70
Drum (Langford Creek)	30	39 07	76 10	Kent	41	60
Drum (Smith Creek)	24	38 07	76 24	St. Marys	44	65
Drum Point Light	20	38 19	76 25	Calvert	17	55

¹ See Somerset County publications.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Duck (Honga River)	40	38 17	76 06	Dorchester	110	92
Duck (Choptank River)	35	38 36	76 00	Talbot	260	157
Dull	32	38 56	76 15	Queen Annes	81	78
Dune	25	38 14	76 41	St. Marys	116	103
Dunk	33	38 45	76 19	Talbot	94	82
Dunnock	38	38 23	76 17	Dorchester	86	83
Dupont	37	38 34	76 13	Dorchester	43	69
Dusky	24	38 10	76 26	St. Marys	66	74
Dutchman	3	38 52	76 31	Anne Arundel	87	93
Dwarf	19	38 30	76 40	Calvert	44	37
Dynard	25	38 18	76 43	St. Marys	153	115
Eagle (Langford Creek)	30	39 08	76 11	Kent	44	61
Eagle (Harris Creek)	33	38 44	76 19	Talbot	93	81
Ear	41	38 17	76 00	Dorchester	122	96
Earle (Corsica River)	30	39 05	76 08	Queen Annes	26	44
Earle (Nanticoke River)	11	38 21	75 52	Wicomico	1	25
East	9	37 56	75 50	Somerset	48	51
E. Cambridge Spire	35	38 34	76 04	Dorchester	13	50
E. Cambridge Tall Stack	35	38 34	76 04	Dorchester	14	49
Eastman	34	38 46	76 15	Talbot	140	99
Easton	32	38 48	76 08	Talbot	52	71
Edmond	33	38 46	76 18	Talbot	117	85
Edward	32	38 52	76 11	Talbot	15	60
Eedling	26	38 19	76 51	Charles	11	28
Eleanor	37	38 32	76 13	Dorchester	65	78
Ella	12	38 15	75 52	Wicomico	11	29
Elliason	28	39 09	76 15	Kent	8	34
Elliott	41	38 19	76 01	Dorchester	121	95
Ellpow	13	38 18	75 08	Worcester	10	30
Elmore	34	38 46	76 14	Talbot	154	104
Emanuel Church	9	37 59	75 51	Somerset	43	49
End (Harris Creek)	31, 32, 34	38 48	76 17	Talbot	107	41
End (Wicomico River)	12	38 15	75 49	Wicomico	15	31
Engineer	30	39 05	76 08	Queen Annes	20	46
Enough	24	38 07	76 24	St. Marys	43	65
Enter	34, 35	38 40	76 10	Talbot	226	133
Episcopal Church Cross (Old St. Marys)	24	38 11	76 26	St. Marys	74	81
Etna	3	38 53	76 31	Anne Arundel	90	94
Etta	37	38 32	76 12	Dorchester	55	74
Evans	30	39 06	76 08	Queen Annes	16	49
Ewell Church Spire (Smith Island)	8	37 58	76 01	Somerset	58	47
Face	32	38 49	76 11	Talbot	31	67
Fact	26	38 20	76 51	St. Marys	177	120
Fair	32	38 48	76 12	Talbot	26	65
Fairbanks	34	38 45	76 16	Talbot	131	96
Fairhaven	4	38 45	76 34	Anne Arundel	110	101
Fairmount Church	7	38 06	75 48	Somerset	33	44
Farm	41	38 19	76 03	Dorchester	118	94
Farr	26	38 19	76 50	St. Marys	176	121
Fassett	13	38 17	75 08	Worcester	12	31
Fence	25	38 15	76 41	St. Marys	117	101
Ferry (Magothy River)	2	39 04	76 30	Anne Arundel	19	72

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Ferry (Choptank River)	35	38 34	76 02	Dorchester	11	48
Ferry (Wye River)	32	38 53	76 11	Queen Annes	96	84
Field	2	39 00	76 30	Anne Arundel	55	84
Fig	34	38 47	76 08	Talbot	55	145
Fight	19	38 26	76 39	St. Marys	7	42
Finish	38	38 28	76 17	Dorchester	75	81
Fir	30	29 03	76 11	Queen Annes	33	39
First	34, 35	38 41	76 10	Talbot	223	132
Fish	41	38 16	75 59	Dorchester	123	96
Fishbone	9	37 53	76 00	Virginia	6	1 48
Fishstack	20	38 19	76 27	Calvert	20	54
Fitz	(¹)	38 09	75 47	Somerset	25	43
Flagpole	24	38 08	76 25	St. Marys	48	68
Flag Pond	18	38 27	76 28	Calvert	11	31
Flag Staff (Naval Academy Boathouse)	2	38 59	76 29	Anne Arundel	57	85
Flat (Wye River)	32	38 52	76 11	Queen Annes	115	92
Flat (Smith Creek)	24	38 08	76 25	St. Marys	50	68
Flat Cap	7	38 02	75 53	Somerset	40	46
Folder	26	38 32	76 41	Charles	1	35
Fog 2	6	38 02	76 02	Somerset	54	39
Ford (Langford Creek)	30	39 08	76 11	Kent	45	62
Ford (Chesapeake Bay)	21	38 14	76 24	St. Marys	26	59
Ford (Big Annemessex River)	7	38 04	75 50	Somerset	36	45
Fore	30	39 06	76 12	Kent	34	53
Fork	28	39 09	76 15	Kent	7	35
Forr	19	38 25	76 36	St. Marys	8	43
Fort (Severn River)	2	38 59	76 28	Anne Arundel	33	77
Fort (St. Marys River)	24	38 08	76 26	St. Marys	56	71
Fort Howard						
Taller Water Tank	27	39 12	76 27	Baltimore	5	26
Fox	34	38 46	76 17	Talbot	115	92
Fox Island Poplar	9	37 54	75 54	Virginia	9	2 50
Foxwell	25	38 17	76 38	St. Marys	127	94
Frank	32	38 51	76 12	Talbot	21	62
Franklin	4	38 49	76 30	Anne Arundel	105	99
Frog	41	38 14	75 57	Dorchester	125	96
Front	33	38 44	76 21	Talbot	81	77
Gander	35	38 36	75 59	Dorchester	7	47
Gantt	(³)	38 20	75 06	Worcester	40	25
Gash	34	38 45	76 07	Talbot	198	122
Geog	7	38 03	75 49	Somerset	39	46
Gibbs	34	38 47	76 11	Talbot	37	141
Ginger	3	38 57	76 33	Anne Arundel	75	90
Gis	35	38 38	76 07	Talbot	250	153
Go	32	38 53	76 10	Queen Annes	122	94
Golds	31	38 42	76 09	Talbot	218	130
Goose (Grays Inn River)	30	39 06	76 13	Kent	28	50
Goose (St. George River)	24	38 08	76 29	St. Marys	95	88
Gordon	30	39 03	76 11	Queen Annes	32	40
Gover	11	38 21	75 54	Dorchester	129	98
Gowan	3	38 53	76 29	Anne Arundel	86	93

Somerset County publication.

² See progress map in Worcester County publication.³ See Somerset County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
Grace	34	38 46	76 17	Talbot	102	88
Grace M. E. Church	15	38 01	75 23	Virginia	17	41
Gram (Severn River)	3	38 57	76 28	Anne Arundel	64	86
Gram (Broad Creek)	34	38 46	76 15	Talbot	138	98
Granary	32	38 53	76 08	Queen Annes	126	96
Grason	24	38 10	76 26	St. Marys	61	75
Gratitude	28, 29	39 08	76 16	Kent	16	37
Grave	34	38 46	76 14	Talbot	139	102
Gravel	24	38 10	76 26	St. Marys	71	79
Gray	30	39 06	76 13	Kent	30	51
Great	33	38 45	76 21	Talbot	80	77
Great Shoals Light	12	38 13	75 53	Wicomico	10	35
Greek	31	38 56	76 18	Queen Annes	68	72
Green (Eastern Bay)	32	38 54	76 12	Queen Annes	88	80
Green (Manokin River)	7	38 09	75 47	Somerset	29	44
Green Run Inlet Life Saving Station Flag-staff.	14, 15	38 05	75 12	Worcester	31	38
Greenbury	2	38 58	76 27	Anne Arundel	31	77
Greenbury Point Light	2	38 58	76 27	Anne Arundel	32	77
Greenwell	37	38 33	76 14	Dorchester	40	68
Grind	24	38 10	76 27	St. Marys	90	76
Grove (Reeds Creek)	30	39 03	76 10	Queen Annes	29	42
Grove (Bretons Bay)	25	38 14	76 41	St. Marys	115	104
Grubin	35	38 38	76 07	Talbot	251	153
Guest	25	38 18	76 43	St. Marys	150	114
Guilberts Cupola	14	38 09	75 17	Worcester	27	38
Guthier	21	38 10	76 31	St. Marys	103	93
Gull	13	38 19	75 06	Worcester	7	28
Gunners	39, 40	38 20	76 13	Dorchester	101	86
Gust	26	38 19	76 51	Charles	12	28
Gusta	32	38 53	76 10	Talbot	10	58
Gut	30	39 09	76 09	Kent	63	69
Hackett	2	38 59	76 25	Anne Arundel	28	76
Haddaway	33	38 47	76 26	Talbot	77	76
Haines	5	38 11	75 57	Somerset	11	37
Hall (Potomac River)	22	38 04	76 22	St. Marys	36	62
Hall (Miles River)	34	38 45	76 10	Talbot	61	148
Hall House (Middle Chimney)	22	38 04	76 22	St. Marys	37	63
Hallowing	19	38 31	76 40	Calvert	45	36
Ham (Magothy River)	2	39 05	76 30	Anne Arundel	15	71
Ham (Miles River)	34	38 46	76 10	Talbot	59	147
Hambrooks Bar Beacon	35	38 36	76 05	Dorchester	17	50
Hamilton	13	38 20	75 05	Worcester	1	26
Hammett	24	38 13	76 28	St. Marys	78	85
Handys Hammock	13, 14	38 13	75 15	Worcester	25	36
Hard	26	38 16	76 50	Charles	15	31
Harmon	13	38 20	75 07	Worcester	3	26
Harp	30	39 09	76 09	Kent	60	68
Harper	34	38 46	76 14	Talbot	158	106
Harrington	38	38 29	76 18	Dorchester	77	82
Harrison	34	38 47	76 17	Talbot	104	89

¹ See Worcester County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Harry	34, 35	38 40	76 08	Talbot	230	134
Has	7	38 04	75 52	Somerset	35	45
Haven	28, 29	39 09	76 15	Kent	13	35
Hawk	33	38 45	76 19	Talbot	95	82
Hayden	26	38 21	76 52	Charles	8	26
Head	41	38 13	76 02	Dorchester	114	93
Healey (Bretons Bay)	25	38 16	76 39	St. Marys	131	97
Healey (Island Creek)	34, 35	38 40	76 08	Talbot	238	137
Hedney	26	38 18	76 51	Charles	13	29
Hellen	20	38 21	76 29	Calvert	28	49
Hen	33	38 44	76 18	Talbot	120	86
Henderson	32, 34	38 47	76 08	Talbot	53	71
Henry	37	38 33	76 15	Dorchester	34	66
Here	31	38 57	76 20	Queen Annes	57	68
Heron	25	38 13	76 43	St. Marys	164	105
Herr	32	38 50	76 13	Talbot	23	63
Herring	30	39 07	76 13	Kent	31	51
Herring Pond 2	(¹)	38 10	76 41	Virginia	1	¹ 105
Hickory	1	39 05	76 27	Anne Arundel	12	69
High (Seyern River)	2	39 04	76 33	Anne Arundel	44	81
High (Honga River)	41	38 19	76 01	Dorchester	120	95
Higher	34	38 43	76 07	Talbot	210	127
Hill	3	38 55	76 30	Anne Arundel	71	88
Hog 2	20	38 19	76 24	St. Marys	22	56
Hog Point (Holland 3)	16	38 43	76 32	Calvert	1	26
Holland (Chesapeake Bay)	4	38 44	76 32	Anne Arundel	111	101
Holland (Wicomico River)	12	38 15	75 51	Wicomico	12	30
Holland Island Bar Light	6	38 04	76 06	Somerset	53	39
Holland Island Church Spire	42	38 07	76 05	Dorchester	95	104
Hollow	25	38 16	76 39	St. Marys	132	98
Holly	34	38 44	76 12	Talbot	164	108
Holton Point	30	39 05	76 09	Queen Annes	27	43
Hoo	30	39 08	76 09	Kent	66	70
Hook	32	38 54	76 11	Queen Annes	98	85
Hooper Island Light	39	38 15	76 15	Dorchester	92	84
Hooper Strait Light	40	38 14	76 05	Dorchester	113	93
Hoopersville Methodist Church Cupola	40	38 16	76 11	Dorchester	98	88
Hope	31	38 58	76 19	Queen Annes	63	70
Hopkins (Herring Bay)	4	38 46	76 33	Anne Arundel	109	100
Hopkins (Broad Creek)	34	38 45	76 13	Talbot	160	106
Hopkins Memorial Church Cupola	40	38 15	76 08	Dorchester	97	88
Horn (Magothy River)	2	39 05	76 31	Anne Arundel	17	72
Horn (Seyern River)	2	38 58	76 28	Anne Arundel	62	85
Hornor	30	39 08	76 10	Kent	53	65
Horse	9	37 57	76 00	Virginia	5	² 49
Horseshoe (Chesapeake Bay)	3	38 50	76 29	Anne Arundel	104	99

¹ See St. Marys County publications.² See Somerset County publications.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Horseshoe (St. Marys River)	24	38 12	76 27	St. Marys	76	82
Hosier Memorial Church Spire	39, 40	38 20	76 14	Dorchester	89	87
Hospital Cupola (Naval Academy)	2	38 59	76 30	Anne Arundel	56	85
Hough	32	38 51	76 12	Queen Annes	90	81
House	35	38 38	75 58	Dorchester	3	45
Howard (Choptank River)	35	38 35	76 07	Dorchester	20	51
Howards (St. Clement Bay)	25	38 16	76 42	St. Marys	146	110
Howells	35	38 37	76 07	Talbot	253	154
Huddle	2	39 04	76 29	Anne Arundel	20	73
Hudson	37	38 32	76 15	Dorchester	32	65
Hugh	37	38 32	76 12	Dorchester	54	73
Hunter	34	38 43	76 08	Talbot	203	124
Hunting	34	38 46	76 10	Talbot	42	143
Hut	35	38 38	75 58	Dorchester	2	44
Hutchins	19	38 23	76 33	St. Marys	10	46
Hydrographic	30	39 05	76 08	Queen Annes	25	44
Ide	30	39 08	76 08	Kent	65	70
Ila	34	38 42	76 13	Talbot	175	113
Ill 2	16	38 39	76 32	Calvert	3	27
In	24	38 07	76 24	St. Marys	45	66
Indian (Patuxent River)	26	38 30	76 41	Charles	5	38
Indian (Chester River)	30	39 07	76 06	Queen Annes	13	52
Inez	35	38 38	76 07	Talbot	219	152
Ingraya	13	38 14	75 10	Worcester	19	34
Inigoes	24	38 10	76 26	St. Marys	68	73
Inkquill	13	38 18	75 07	Worcester	8	28
Inn	30	39 05	76 12	Kent	37	54
Irish	34	38 42	76 14	Talbot	171	111
Iron	2	39 05	76 29	Anne Arundel	14	71
Island (Severn River)	2	39 02	76 34	Anne Arundel	48	82
Island (Patuxent River)	19	38 21	76 32	Calvert	35	44
Island (Grays Inn Creek)	30	39 06	76 12	Kent	35	53
Isle	30	39 08	76 10	Kent	43	61
Ivee	5	38 15	75 50	Somerset	3	34
Jam	35	38 37	75 59	Talbot	261	158
James (Chesapeake Bay)	36, 37	38 32	76 20	Dorchester	84	61
James (Miles River)	32	38 51	76 12	Talbot	20	62
James Island Light	9	37 58	75 55	Somerset	41	49
Jarrett	30	39 08	76 05	Kent	82	81
Jay	34, 35	38 40	76 08	Talbot	241	139
Jean	5, 7	38 09	75 51	Somerset	22	39
Jenifer	37	38 33	76 15	Dorchester	33	65
Jere	33, 36	38 37	76 22	Talbot	86	79
Johnson	32, 34	38 47	76 08	Talbot	47	69
Jones	5	38 15	75 49	Somerset	2	34
Joseph	6, 8	38 01	76 03	Somerset	55	40
Joshua	7	38 07	75 57	Somerset	14	41
Journey	30	39 08	76 04	Queen Annes	8	56
Judge	34	38 45	76 14	Talbot	152	103

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart, on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Juliet	11	38 20	75 53	Wicomico	2	25
Julius	30	39 09	76 03	Queen Annes	4	59
June	32	38 54	76 10	Queen Annes	104	87
Jutland	24	38 07	76 25	St. Marys	47	67
Kaywood	25	38 14	76 42	St. Marys	139	104
Keenes	39, 40	38 22	76 13	Dorchester	102	86
Kelley	7	38 08	75 55	Somerset	19	41
Kemp	31	38 50	76 18	Talbot	76	40
Kemp Tower	31	38 50	76 18	Talbot	75	40
Kennedy	24	38 10	76 26	St. Marys	69	77
Kent	34, 35	38 40	76 08	Talbot	229	134
Kerwin	40	28 22	76 11	Dorchester	103	89
Key	26	38 22	76 50	St. Marys	180	117
Killiek Shoal Light	(¹)	38 57	75 23	Virginia	22	40
King	30	39 08	76 10	Kent	54	65
Kinsley	30	39 08	76 11	Kent	46	62
Kirby	37	38 32	76 11	Dorchester	58	75
Kirk	34	38 46	76 09	Talbot	58	147
Kirwan	32	38 57	76 15	Queen Annes	82	79
Kit (Island Creek)	34, 35	38 41	76 07	Talbot	235	136
Kitt (Patuxent River)	19	38 28	76 37	Calvert	40	41
Knee	32	38 54	76 10	Queen Annes	99	85
K. of P. Flagstaff (Solomons)	20	38 19	76 27	Calvert	21	53
Knob	2	39 00	76 30	Anne Arundel	36	78
Knock	31	38 57	76 19	Queen Annes	64	70
Koot	34	38 46	76 17	Talbot	114	91
Labor	24	38 06	76 28	St. Marys	111	69
Lakes	40	38 19	76 09	Dorchester	106	90
Lan	35	38 38	76 07	Talbot	247	151
Landeye	34, 35	38 40	76 09	Talbot	243	139
Landing	31	38 57	76 19	Queen Annes	65	71
Landlet	14	38 07	75 18	Worcester	29	38
Laney	37	38 32	76 13	Dorchester	66	78
Langford	30	39 06	76 10	Kent	73	73
Large Water Tank	35	38 38	76 10	Dorchester	23	52
Larramore	3	38 57	76 34	Anne Arundel	79	91
Law	32	38 51	76 12	Talbot	19	61
Lawn	31, 32, 34	38 47	76 16	Talbot	106	41
Lawyer	30	39 07	76 11	Kent	40	60
Layor	34	38 43	76 08	Talbot	216	129
Layton	37	38 33	76 12	Dorchester	50	72
Leary	30	39 08	76 09	Kent	57	66
Leaven	32	38 53	76 11	Queen Annes	112	90
Le Compte	35	38 36	76 10	Dorchester	22	52
Lee	37	38 33	76 13	Dorchester	46	70
Leeds	32	38 48	76 12	Talbot	35	68
Leitch	19	38 32	76 40	Calvert	47	33
Lend	19, 20	38 23	76 30	Calvert	30	48
Lerch Windmill	3	38 50	76 32	Anne Arundel	100	97
Le Seur	32	38 52	76 10	Queen Annes	117	92
Little	5	38 13	75 50	Somerset	7	35
Little Gum	30	39 05	76 12	Kent	24	48

¹ See Worcester County publication.

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Liver	31	38 57	76 19	Queen Annes	59	68
Lloyd	32	38 52	76 10	Talbot	14	59
Locust (Chesapeake Bay)	1	39 06	76 26	Anne Arundel	4	68
Locust (Langford Creek)	30	39 09	76 11	Kent	49	63
Locust (Manokin River)	7	38 09	75 48	Somerset	24	42
Long (Severn River)	2	39 03	76 33	Anne Arundel	47	82
Long (Miles River)	34	38 46	76 10	Talbot	38	141
Long Point	15	38 00	75 22	Virginia	18	¹ 41
Longwells Windmill	13	38 15	75 09	Worcester	16	33
Louise	37	38 33	76 15	Dorchester	39	68
Love Point Light	29	39 03	76 17	Queen Annes	42	33
Lovely	30	39 09	76 09	Kent	62	69
Lovers	25	38 16	76 39	St. Marys	120	99
Lowell	21	38 09	76 30	St. Marys	100	91
Lowndes	32	38 48	76 08	Talbot	48	69
Luce	2	39 01	76 31	Anne Arundel	53	84
Lucy	30	39 06	76 13	Kent	27	50
Luna	34	38 45	76 16	Talbot	133	96
Lynch Point 3	(²)	38 03	76 31	Virginia	2	² 70
Lyon	26	38 18	76 50	St. Marys	175	122
McConnell	34	38 47	76 09	Talbot	57	146
McCoy	24	38 13	76 28	St. Marys	79	85
McKay	24	38 11	76 27	St. Marys	86	79
Mac	37	38 32	76 13	Dorchester	67	78
Mackall	19, 20	38 23	76 30	Calvert	32	46
Macum	29	39 00	76 17	Queen Annes	39	35
Madison Southern M. E. Church Spire	37	38 30	76 13	Dorchester	68	79
Magothy	2	39 02	76 25	Anne Arundel	23	74
Maiden	34	38 46	76 11	Talbot	63	149
Mais	32	38 48	76 11	Talbot	32	67
Major	30	39 07	76 10	Kent	71	72
Make	30	39 09	76 05	Kent	86	84
Mansion	25	38 16	76 42	St. Marys	145	109
Marge	34	38 47	76 11	Talbot	36	140
Marion	34	38 47	76 16	Talbot	143	100
Mars	34	38 46	76 15	Talbot	147	101
Marsh (Broad Creek)	34	38 44	76 13	Talbot	165	109
Marsh (Manokin River)	7	38 08	75 53	Somerset	20	42
Marshall	34	38 44	76 12	Talbot	162	107
Marshy	32	38 57	76 14	Queen Annes	85	79
Martin (St. Marys River)	24	38 12	76 27	St. Marys	77	84
Martin (Tred Avon River)	34	38 43	76 09	Talbot	186	117
Mary	37	38 32	76 12	Dorchester	56	74
Maryland	36, 37, 38	38 29	76 17	Dorchester	73	58
Maryland-Virginia (Life-Saving Station Beach)	15	38 02	75 15	Worcester	34	39
Maryland-Virginia (Pope Island)	15	38 02	75 15	Worcester	35	39
Maryland-Virginia (Rail-road)	15	38 01	75 23	Worcester	36	42
Maslin	34, 35	38 40	76 08	Talbot	239	138
Matta	31	38 54	76 20	Queen Annes	50	65

¹ See Worcester County publication.² See St. Marys County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
Matter	32	38 53	76 09	Talbot	6	56
May	34	38 44	76 08	Talbot	190	119
Mayo	3	38 55	76 31	Anne Arundel	84	92
Mean	34, 35	38 40	76 08	Talbot	240	138
Melfield	30	39 04	76 07	Queen Annes	23	45
Melon	34	38 45	76 07	Talbot	197	121
Melton	30	39 08	76 04	Kent	83	82
M. E. Church (Solomons)	20	38 19	76 28	Calvert	23	53
M. E. Church (Tilghman Island)	33	38 42	76 20	Talbot	88	80
Miles	7	38 06	76 00	Somerset	16	41
Mileys	25	38 16	76 43	St. Marys	153	110
Mill (Langford Creek)	30	39 08	76 11	Kent	51	64
Mill (Patuxent River)	20	38 20	76 30	St. Marys	15	51
Mill (Chincoteague Bay)	15	38 03	75 20	Worcester	33	42
Miller	34	38 47	76 16	Talbot	110	90
Millwind	32	38 48	76 13	Talbot	67	72
Mink	34	38 47	76 17	Talbot	103	89
Mint	39	38 21	76 14	Dorchester	87	85
Mistle	34	38 43	76 08	Talbot	215	129
Mitchell	37	38 33	76 15	Dorchester	35	66
Mitchells Bluff 2	28	39 13	76 14	Kent	3	29
Moke	34, 35	38 40	76 07	Talbot	236	137
Money	15	38 01	75 23	Virginia	16	¹ 41
Monkey	9	37 57	75 48	Somerset	49	52
Moon	7	38 04	75 48	Somerset	37	45
Moore	36, 37, 38	38 30	76 17	Dorchester	79	59
Morn	32	38 53	76 08	Queen Annes	127	96
Morsel	19	38 29	76 39	Calvert	42	39
Mos	10	37 54	75 46	Virginia	10	² 54
Mouldy	25	38 16	76 38	St. Marys	122	97
Mount Pleasant Church	9	37 59	75 51	Somerset	44	49
Mount Vernon M. E. Church	5	38 15	75 50	Somerset	4	35
Mt. Zion M. E. Church Spire	39, 40	38 19	76 14	Dorchester	91	87
Mouth	31	38 52	76 20	Queen Annes	49	64
Mud (Tred Avon River)	34	38 42	76 09	Talbot	219	130
Mud (Sinepuxent Bay)	13	38 15	75 08	Worcester	18	33
Muddy	29, 30	38 59	76 14	Queen Annes	37	36
Mutton	34	38 41	76 11	Talbot	178	114
Myrtle (Choptank River)	35	38 39	75 58	Dorchester	1	44
Myrtle (Broad Creek)	34	38 44	76 16	Talbot	124	93
Nanti	12	38 14	75 54	Wicomico	8	29
Nanticoke Church	11, 12	38 16	75 54	Wicomico	6	26
Narrows	33	38 43	76 19	Talbot	92	81
Narrows Point	29, 30	39 01	76 13	Kent	20	40
Nat (Langford Creek)	30	39 08	76 11	Kent	50	64
Nat (Patuxent River)	20	38 21	76 30	St. Marys	14	50
Neck (Langford Creek)	30	39 07	76 10	Kent	70	72
Neck (Tred Avon River)	34	38 45	76 07	Talbot	192	120
Neck (Chincoteague Bay)	13	38 14	75 12	Worcester	23	35
Ned	34	38 44	76 17	Talbot	129	95

¹ See Worcester County publication.² See Somerset County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Needle	31	38 54	76 17	Queen Annes	72	74
Neil	37	38 32	76 11	Dorchester	57	74
Nellys	13	38 16	75 09	Worcester	14	32
Nelson 3	34	38 42	76 16	Talbot	122	92
Neptune	34	38 47	76 15	Talbot	145	101
Nest	30	39 08	76 09	Kent	58	67
Neva	34	38 44	76 09	Talbot	197	118
New	20	38 20	76 28	Calvert	25	51
New Barn Cupola	32	38 56	76 16	Queen Annes	80	78
Newport	13	38 14	75 14	Worcester	24	36
Newtown	25	38 14	76 42	St. Marys	138	103
Nils	(¹)	39 10	76 04	Kent	88	86
No	32	38 55	76 10	Queen Annes	100	85
No Road	30	39 06	76 13	Kent	32	52
Noblee	38	38 29	76 17	Dorchester	74	81
Nodim	32	38 53	76 10	Talbot	9	57
Noname	25	38 16	76 38	St. Marys	129	96
Norman (Honga River)	40	38 15	76 06	Dorchester	112	92
Norman (Eastern Bay)	32	38 55	76 16	Queen Annes	76	76
North	39	38 21	76 16	Dorchester	88	85
North Beach Life Saving Station.	13, 14	38 12	75 09	Worcester	21	35
North Church Spire (Smith Island)	8	38 00	76 02	Somerset	56	47
North Point (Old Tower Foundation)	27	39 12	76 27	Baltimore	3	26
Nose	32	38 52	76 12	Queen Annes	92	82
Noth	30	39 08	76 09	Kent	56	66
Nub	32	38 53	76 08	Queen Annes	129	97
Nut	4	38 48	76 31	Anne Arundel	106	99
Oak	24	38 07	76 25	St. Marys	52	66
Ocean	13	38 19	75 05	Worcester	4	27
Ocean City Water Tower	13	38 20	75 05	Worcester	2	26
Oil	10	37 57	75 41	Virginia	13	² 54
Okahanikan	42	38 11	76 05	Dorchester	94	104
Okay	41	38 18	75 56	Dorchester	127	97
Old	10	37 58	75 41	Somerset	51	52
Old Church Spire (Smith Island)	8	37 59	76 03	Somerset	57	47
Ollie	32	38 49	76 12	Talbot	24	64
Oppkit	19	38 27	76 39	St. Marys	6	41
Orb	32	38 53	76 12	Queen Annes	94	83
Orchard	28, 29	39 09	76 16	Kent	15	36
Otto	32, 34	38 47	76 16	Talbot	109	75
Out	24	38 07	76 24	St. Marys	46	67
Over	32	38 56	76 16	Queen Annes	75	76
Overton	30	39 02	76 12	Kent	22	45
Owe	32	38 54	76 10	Queen Annes	97	84
Oyster (Chester River)	30	39 08	76 06	Kent	81	80
Oysters (Wye River)	32	38 55	76 10	Queen Annes	101	86
Pagan	24	38 11	76 27	St. Marys	84	81
Parker (Herring Bay)	4	38 46	76 32	Anne Arundel	108	100
Parker (Chesapeake Bay)	17	38 32	76 31	Calvert	8	30

¹ See progress map of Kent County publication.² See Somerset County publications.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Parsons	32	38 54	76 15	Queen Annes	77	77
Parsons Island Water Tank	32	38 55	76 15	Queen Annes	78	77
Pat	20	38 22	76 23	Calvert	16	57
Patch	17	38 33	76 31	Calvert	7	29
Paul (Honga River)	40	38 17	76 07	Dorchester	109	91
Paul (Little Choptank River)	(¹)	38 32	76 10	Dorchester	59	75
Paw	25	38 16	76 40	St. Marys	134	99
Peach	30	39 06	76 10	Kent	72	72
Peach Hill	2	39 05	76 25	Anne Arundel	5	70
Peak	19	38 25	76 31	Calvert	34	45
Pearson	32	38 51	76 15	Talbot	72	74
Peary	34	38 43	76 14	Talbot	169	110
Peck	34	38 42	76 10	Talbot	182	116
Peebee	34	38 44	76 07	Talbot	191	119
Pen (Chesapeake Bay)	17	38 34	76 31	Calvert	6	29
Pen (Manokin River)	(²)	38 09	75 47	Somerset	27	43
Peoples Chapel	33	38 43	76 20	Talbot	91	81
Perry	26	38 21	76 50	St. Marys	178	119
Phil (Magothy River)	1	39 05	76 26	Anne Arundel	10	69
Phil (Little Choptank River)	37	38 34	76 13	Dorchester	42	69
Philip (Langford Creek)	30	39 09	76 09	Kent	64	69
Philip (Wye River)	32	38 53	76 09	Queen Annes	125	96
Photo	19	38 26	76 36	Calvert	38	42
Pick	32	38 52	76 08	Talbot	1	54
Pier (Chesapeake Bay)	16, 17	38 36	76 30	Calvert	5	28
Pier (Smith Creek)	24	38 07	76 24	St. Marys	42	64
Pine (Bretons Bay)	25	38 16	76 38	St. Marys	123	96
Pine (Broad Creek)	34	38 45	76 16	Talbot	132	96
Piney	32	38 53	76 12	Queen Annes	95	83
Piney Point Light	24	38 08	76 32	St. Marys	113	94
Pink	34	38 47	76 16	Talbot	111	90
Pipe	24	38 07	76 24	St. Marys	41	65
Place	25	38 17	76 42	St. Marys	149	113
Plain	34	38 43	76 09	Talbot	184	116
Plow	34	38 43	76 07	Talbot	209	126
Plum 3	16	38 37	76 31	Calvert	4	28
Poco	34, 35	38 40	76 07	Talbot	237	137
Point	2	39 02	76 31	Anne Arundel	40	79
Point Agin	21	38 11	76 21	St. Marys	28	60
Point Look-in	22	38 06	76 20	St. Marys	33	61
Point Lookout Light	22, 23	38 02	76 19	St. Marys	35	62
Point No Point	22	38 09	76 19	St. Marys	29	60
Point No Point Light	22	38 08	76 17	St. Marys	30	60
Point of Rocks	18	38 25	76 25	Calvert	13	31
Pole	11	38 18	75 54	Wicomico	3	26
Pomona	30	39 09	76 05	Kent	84	83
Pond	24	38 08	76 28	St. Marys	92	71
Pont	34	38 42	76 14	Talbot	172	112

¹ See progress map in Dorchester County publications.² See progress map in Somerset County publications.

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Pooles Island 2	27, 28	39 17	76 16	Harford	2	¹ 23
Pooles Island Light	27, 28	39 17	76 16	Harford	1	¹ 23
Pope Island Life Saving Station	15	38 01	75 15	Virginia	20	² 40
Poplar	18	38 29	76 29	Calvert	10	30
Poplar South	33	38 45	76 23	Talbot	79	77
Potato	34, 35	38 41	76 07	Talbot	232	135
Potomac	22, 23	38 03	76 19	St. Marys	34	62
Pov	37, 38	38 30	76 16	Dorchester	71	80
Prec	26	38 16	76 49	St. Marys	171	124
Price	24	38 03	76 28	St. Marys	94	87
Prickly	7	38 05	75 52	Somerset	34	45
Prince	19, 26	38 32	76 41	Prince George	1	³ 33
Princess	32	38 53	76 09	Queen Annes	124	95
Profound	25	38 17	76 43	St. Marys	157	111
Protestant	25	38 15	76 41	St. Marys	118	101
Prussian	30	39 06	76 13	Kent	29	51
Purse	2	39 03	76 26	Anne Arundel	22	73
Quaker	30	39 06	76 10	Kent	74	74
Quarter	32	38 53	76 09	Talbot	8	57
Rabbit	34	38 46	76 17	Talbot	101	88
Raccoon	35	38 38	75 59	Talbot	264	159
Radcliffe	34	38 46	76 07	Talbot	195	121
Radec	25	38 17	76 43	St. Marys	156	112
Rag	11	38 18	75 54	Wicomico	5	26
Ragged Point 3	36, 37	38 32	76 17	Dorchester	31	57
Rail (Swan Creek)	28	39 09	76 15	Kent	12	34
Railroad	29, 32	38 58	76 14	Queen Annes	84	36
Rails (St. Clement Bay)	25	38 15	76 43	St. Marys	142	107
Railway Water Tank	29	39 02	76 19	Queen Annes	40	33
Rain	30	39 01	76 12	Kent	21	44
Raley	24	38 09	76 26	St. Marys	58	72
Ran 2	24	38 08	76 25	St. Marys	49	68
Ray	34	38 45	76 14	Talbot	150	102
Reach Hammock	9	37 53	75 59	Virginia	7	⁴ 48
Rear	35	38 35	76 02	Talbot	257	156
Red	35	38 37	76 05	Talbot	254	154
Red Beacon (1908)	24	38 06	76 24	St. Marys	39	63
Rede	36, 37	38 31	76 20	Dorchester	83	60
Reed (Chesapeake Bay)	21	38 12	76 22	St. Marys	27	59
Reeds (Chester River)	30	39 04	76 10	Queen Annes	28	42
Revell	2	39 04	76 28	Anne Arundel	21	73
Rhode	3	38 52	76 31	Anne Arundel	94	95
Rice	35	38 38	76 07	Talbot	248	152
Rich Neck Water Tank	31, 32	38 51	76 16	Talbot	74	40
Ricks	14	38 10	75 16	Worcester	26	38
Rieman	32	38 48	76 12	Talbot	34	68
Right	32	38 53	76 08	Talbot	3	55
Ring	29	39 01	76 19	Queen Annes	43	32
Ritter	34, 35	38 41	76 07	Talbot	233	136
River Springs Catholic Chapel Cross	25, 26	38 15	76 46	St. Marys	165	126

¹ See Baltimore County publication.² See Worcester County publication.³ See Calvert County publication.⁴ See Somerset County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Riverview	34, 35	38 42	76 11	Talbot	221	13
Roar	12	38 16	75 55	Wicomico	7	28
Roast	41	38 17	76 02	Dorchester	116	94
Robertson (Chester River)	(¹)	39 10	76 03	Kent	90	87
Robertson (Tred Avon River)	34	38 44	76 08	Talbot	188	118
Robertson Windmill	(¹)	39 10	76 03	Kent	89	86
Robins	36, 37	38 34	76 19	Dorchester	30	56
Robrecht	24	38 09	76 30	St. Marys	106	90
Rock	24	38 10	76 26	St. Marys	65	75
Rock Point	1, 27	39 10	76 29	Anne Arundel	1	67
Rock Point Catholic Church Cross	26	38 16	76 50	Charles	16	31
Rod (Priest's House)	24	38 09	76 26	St. Marys	57	71
Rod (Harris Creek)	32, 34	38 48	76 16	Talbot	108	75
Rolphs	(²)	39 10	76 02	Queen Annes	1	62
Roof	25	38 14	76 43	St. Marys	141	107
Room	5	38 11	75 56	Somerset	10	37
Rose	34	38 45	76 14	Talbot	137	98
Ross (Little Choptank River)	37	38 33	76 13	Dorchester	41	68
Ross (Broad Creek)	34	38 44	76 14	Talbot	167	109
Royal	34	38 46	76 14	Talbot	148	102
Roys	34	38 42	76 14	Talbot	170	111
Run	17, 18	38 30	76 30	Calvert	9	30
Russell	24	38 09	76 31	St. Marys	105	91
Ruth	30	39 05	76 07	Queen Annes	24	45
St. Anne's Church Spire	2	38 59	76 30	Anne Arundel	59	85
St. Catherine	26	38 14	76 48	St. Marys	167	127
St. Clement	25	38 14	76 43	St. Marys	140	106
St. George 4	24	38 06	76 29	St. Marys	112	93
St. Inigoes Church Cross	24	38 09	76 25	St. Marys	59	73
St. Jerome	22	38 07	76 20	St. Marys	31	61
St. John's College Cupola	2	38 59	76 30	Anne Arundel	61	85
St. Margaret 2	26	38 15	76 49	St. Marys	170	125
St. Michael Catholic Church Spire	22	38 07	76 22	St. Marys	32	61
St. Michaels P. E. Church Spire	34	38 47	76 13	Talbot	65	140
St. Michaels Water Tank	32, 34	38 47	76 14	Talbot	66	72
St. Patrick	25	38 14	76 44	St. Marys	162	106
St. Pierre	7	38 08	75 51	Somerset	21	42
St. Thomas Church Spire	40	38 16	76 04	Dorchester	111	92
Sacred Heart Church (Spire (Bushwood))	26	38 18	76 48	St. Marys	174	122
Salt (Severn River)	2	39 01	76 32	Anne Arundel	52	83
Salt (Sinepuxent River)	13	38 14	75 09	Worcester	20	34
Sam	9	37 55	75 53	Somerset	46	50
Samuel (Cox Creek)	31	38 57	76 20	Queen Annes	58	68
Samuel (Broad Creek)	34	38 46	76 13	Talbot	156	105
Sand	20	38 19	76 27	Calvert	22	54
Sandbar	25	38 15	76 42	St. Marys	137	102
Sandy	5, 7	38 08	75 49	Somerset	23	39

¹ See progress map in Kent County publication.² See progress map in Queen Annes County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
Sandy Point Light	2	39 01	76 23	Anne Arundel	25	74
Sang	32	38 53	76 10	Queen Annes	120	94
Sanpoi	13	38 15	75 09	Worcester	17	33
Sara	32	38 49	76 14	Talbot	70	73
Saw	35	38 37	75 58	Dorchester	4	45
Saxis Church Spire	10	37 55	75 43	Virginia	12	1 54
Schoolhouse Cupola	33	38 43	76 20	Talbot	90	81
Scot	10	37 58	75 44	Somerset	50	52
Search	34	38 47	76 10	Talbot	40	142
Seaside	13	38 18	75 06	Worcester	9	29
Second	32	38 48	76 12	Talbot	27	65
Selby	3	38 55	76 30	Anne Arundel	85	93
Senator	5, 6, 7	38 08	76 01	Somerset	15	27
Seth (Little Choptank River)	37	38 34	76 11	Dorchester	48	71
Seth (Miles River)	32	38 50	76 15	Talbot	71	74
Seven Foot Knoll Light	1, 27	39 09	76 25	Anne Arundel	2	68
Shanks Hummock 2	8	37 55	76 03	Virginia	4	1 47
Sharkin Shoal Light	41	38 12	75 59	Dorchester	124	103
Sharp	2	39 03	76 34	Anne Arundel	46	81
Sharps Island Light	33, 36	38 38	76 23	Talbot	85	79
Shaw	32	38 52	76 11	Talbot	17	60
Shehan	24	38 10	76 31	St. Marys	101	92
Shell (West River)	3	38 51	76 32	Anne Arundel	97	96
Shell (Choptank River)	35	38 35	76 00	Dorchester	9	48
Sheridan	19	38 28	76 39	Calvert	41	40
Ship	30	39 05	76 07	Queen Annes	21	46
Shippen	30	39 07	76 06	Kent	80	79
Shipping	25	38 16	76 43	St. Marys	159	109
Shoal	35	38 34	76 03	Dorchester	12	49
Shore	13	38 16	75 07	Worcester	13	31
Short	5	38 12	75 53	Somerset	9	37
Show	34, 35	38 41	76 07	Talbot	234	136
Sig	22, 24	38 06	76 24	St. Marys	38	63
Sillery	1, 2	39 05	76 27	Anne Arundel	9	69
Skid	36, 37, 38	38 30	76 20	Dorchester	82	60
Skinner	34	38 45	76 15	Talbot	135	97
Sleep	24	38 10	76 25	St. Marys	64	76
Slim	19	38 25	76 35	Calvert	37	43
Smack	24	38 07	76 28	St. Marys	110	86
Smith	33	38 46	76 19	Talbot	96	83
Smith Point Light	8, 23	37 53	76 11	Virginia	3	2 63
Smoke	24	38 10	76 25	St. Marys	62	75
Snout	32	38 52	76 11	Queen Annes	113	91
Snub	30	39 06	76 11	Kent	39	59
Soak	24	38 12	76 28	St. Marys	80	84
Sollers	19, 20	38 23	76 30	Calvert	31	47
Solomon	37	38 34	76 12	Dorchester	47	70
Solomons Lump Light	6, 7	38 03	76 01	Somerset	17	39
Some	31	38 55	76 20	Queen Annes	52	66
Somers Cove Light	9	37 58	75 53	Somerset	42	49
Sothoron	19	38 30	76 40	St. Marys	1	37
Sound	26	38 15	76 47	St. Marys	169	126

¹ See Somerset County publication.² See St. Marys County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
South (Barren Island)	39	38 20	76 16	Dorchester	90	85
South (Wye River)	32	38 52	76 11	Queen Annes	114	91
Southeast	(¹)	39 10	76 03	Queen Annes	2	61
Southern M. E. Church	33	38 42	76 21	Talbot	83	78
Spaniard Pt. 2 Upper	30	39 06	76 09	Queen Annes	17	48
Spar	32	38 49	76 13	Talbot	69	73
Spencer	34	38 45	76 13	Talbot	161	107
Spike	28	39 09	76 15	Kent	11	33
Spin	34	38 43	76 09	Talbot	185	117
Spindle	35	38 37	75 59	Talbot	262	158
Spit	2	38 59	76 26	Anne Arundel	29	76
Spree	34	38 47	76 10	Talbot	43	143
Spring (Severn River)	2	39 01	76 30	Anne Arundel	37	78
Spring (Grays Inn Creek)	30	39 06	76 13	Kent	26	49
Stab	34	38 45	76 07	Talbot	193	120
Staff	7	38 08	75 50	Somerset	32	44
Star	32	38 53	76 11	Queen Annes	111	90
Starkley	30	39 08	76 05	Queen Annes	10	55
Start	2	38 58	76 28	Anne Arundel	63	86
State House Dome	2	38 59	76 29	Anne Arundel	58	85
Steve	31	38 57	76 19	Queen Annes	61	69
Stevens	29	39 07	76 15	Kent	18	38
Sticky	34	38 42	76 14	Talbot	173	112
Stock	20	38 22	76 31	St. Marys	12	48
Stoddard	26	38 22	76 51	Charles	7	25
Stones	25	38 18	76 43	St. Marys	151	116
Stony	34	38 47	76 12	Talbot	64	150
Stop	32	38 53	76 12	Queen Annes	93	82
Straight (Eastern Bay)	31	38 51	76 20	Queen Annes	48	64
Straits (St. George River)	24	38 08	76 30	St. Marys	108	88
Stratton	30	39 06	76 08	Kent	76	75
Straw	34, 35	38 40	76 09	Talbot	227	133
Streett	11	38 21	75 53	Dorchester	130	99
Stretch	34	38 44	76 08	Talbot	189	119
Stump	20	38 22	76 29	Calvert	29	48
Stung	24	38 07	76 25	St. Marys	51	67
Summer	10	37 56	75 40	Virginia	14	² 53
Swan (Severn River)	2	39 03	76 32	Anne Arundel	43	80
Swan (St. George River)	24	38 08	76 30	St. Marys	107	89
Swan Point 3	28	39 09	76 17	Kent	4	31
Sweep	19	38 25	76 33	Calvert	36	44
Sweep	37	38 33	76 13	Dorchester	53	73
Sweepson	30	39 05	76 08	Queen Annes	19	47
Swing	32	38 48	76 12	Talbot	25	64
Switch	3	38 56	76 31	Anne Arundel	72	89
Sylvia	32	38 52	76 10	Talbot	11	58
Tab	24	38 07	76 25	St. Marys	53	64
Taft	34	38 45	76 13	Talbot	159	106
Tail	2	39 04	76 31	Anne Arundel	18	72
Tall	34	38 42	76 09	Talbot	183	116
Tang	34	38 47	76 09	Talbot	46	145
Tar	34	38 43	76 10	Talbot	181	115
Tarkhill	24	38 09	76 30	St. Marys	98	90

¹ See progress map in Queen Annes County publication.² See Somerset County publication.

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Taste	30	39 09	76 05	Kent	85	84
Tavern	28	39 09	76 16	Kent	6	32
Taylor (South River)	3	38 57	76 34	Anne Arundel	78	91
Taylor (Slaughter Creek)	38	38 28	76 18	Dorchester	76	82
Taylor (St. George River)	24	38 08	76 30	St. Marys	97	89
Teague	26	38 32	76 40	Charles	2	36
Tenk	31	38 50	76 22	Queen Annes	47	64
Tenuate	24	38 12	76 27	St. Marys	81	83
Terrapin	7	38 01	75 58	Somerset	18	40
Thelma	34	38 46	76 14	Talbot	153	104
Then	31	38 55	76 20	Queen Annes	51	65
Thin	29	38 59	76 15	Queen Annes	38	35
Thomas	3	38 54	76 27	Anne Arundel	68	88
Thomas Point Shoal Light	3	38 54	76 26	Anne Arundel	69	88
Thompson (Cox Creek)	31	38 57	76 19	Queen Annes	62	69
Thompson (St. Marys River)	24	38 09	76 28	St. Marys	91	72
Thorn	30	39 07	76 07	Kent	79	78
Thoro	41	38 20	76 01	Dorchester	119	95
Thorsfare	(1)	38 21	75 06	Worcester	37	24
Thorsten	(2)	39 10	76 03	Kent	91	87
Timber	31	38 57	76 18	Queen Annes	66	71
Tizz	15	38 04	75 20	Worcester	32	43
Tobacco Stick	37	38 32	76 14	Dorchester	69	79
Tobe	34	38 45	76 15	Talbot	126	94
Tobine	32	38 53	76 10	Queen Annes	119	93
Toddville M. E. Church Spire	40	38 18	76 04	Dorchester	117	91
Toe	34	38 43	76 08	Talbot	206	125
Tolly	3	38 57	76 27	Anne Arundel	65	86
Tom (Little Choptank River)	37	38 32	76 12	Dorchester	62	76
Tom (Cox Creek)	31	38 56	76 19	Queen Annes	69	72
Tomakokin	25	38 18	76 44	St. Marys	154	114
Ton	20	38 21	76 28	Calvert	27	50
Toot	35	38 36	76 08	Dorchester	21	52
Top	31	38 55	76 19	Queen Annes	54	67
Torrey	36, 37, 38	38 30	76 16	Dorchester	72	57
Town (Little Choptank River)	37	38 33	76 13	Dorchester	52	72
Town (Patuxent River)	20	38 19	76 29	St. Marys	17	52
Town (Tred Avon River)	34	38 42	76 10	Talbot	220	131
Trappe	35	38 38	76 07	Talbot	246	151
Travers 2	38	38 28	76 20	Dorchester	85	83
Tray	30	39 06	76 12	Kent	36	53
Treasure	28, 29	39 09	76 15	Kent	14	36
Tred	34	38 42	76 11	Talbot	179	115
Trees	25	38 16	76 39	St. Marys	133	98
Trent	19	38 29	76 40	St. Marys	3	39
Trippie	34	38 43	76 08	Talbot	207	125
Tug	34	38 47	76 10	Talbot	41	142
Tull	31	38 56	76 17	Queen Annes	74	74

¹ See progress map in Kent County publication.² See progress map in Worcester County publication.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Turf (Rhode River)	3	38 53	76 31	Anne Arundel	92	95
Turf (St. Clement Bay)	25	38 18	76 43	St. Marys	152	115
Turkey	31	38 54	76 18	Queen Annes	71	73
Turn	32	38 53	76 10	Queen Annes	121	94
Turnagain	14, 15	38 05	75 13	Worcester	30	37
Tuxon	31	38 57	76 19	Queen Annes	60	69
Twin	34	38 43	76 08	Talbot	205	125
Twist	32	38 53	76 10	Queen Annes	107	88
Twixt	32	38 53	76 11	Queen Annes	110	90
Two	32	38 49	76 11	Talbot	30	66
Up	35	38 39	75 58	Talbot	266	159
Upper	26	38 22	76 52	Charles	6	24
Urie	28	39 09	76 15	Kent	9	33
Valley	25	38 17	76 38	St. Marys	126	94
Valliant	33	38 46	76 23	Talbot	78	76
Veith	36, 37, 38	38 30	76 17	Dorchester	80	59
Venture	34	38 43	76 07	Talbot	208	126
Venus	34	38 46	76 15	Talbot	146	101
Villa (Miles River)	32	38 48	76 07	Talbot	51	71
Ville (Cox Creek)	31	38 57	76 18	Queen Annes	67	71
Vine	33, 34	38 46	76 18	Talbot	98	83
Vue	34	38 42	76 13	Talbot	174	113
Wab	(¹)	38 09	75 47	Somerset	26	43
Waggaman	3	38 57	76 32	Anne Arundel	74	89
Waggaman Windmill	3	38 57	76 32	Anne Arundel	73	89
Wall (St. George River)	24	38 09	76 31	St. Marys	104	92
Wall (Tred Avon River)	34	38 44	76 07	Talbot	201	123
Walnut	5	38 15	75 48	Somerset	1	33
Wann	30	39 08	76 09	Kent	68	71
Wap	33	38 42	76 21	Talbot	82	78
War	35	38 36	75 58	Dorchester	6	46
Ware	31	38 56	76 19	Queen Annes	55	67
Warrior	33	38 45	76 18	Talbot	118	85
Wash	29, 31	38 58	76 21	Queen Annes	44	² 75
Water	34	38 45	76 07	Talbot	194	120
Water Tower (Porto Bello)	24	38 11	76 27	St. Marys	87	78
Waterloo	26	38 14	76 47	St. Marys	166	127
Watermelon Hummock	9	37 57	75 50	Somerset	47	51
Weather Bureau Staff	34, 35	38 41	76 10	Talbot	222	131
Weave	34	38 43	76 09	Talbot	204	124
Weeks	30	39 05	76 12	Kent	25	49
Weems	2	39 00	76 30	Anne Arundel	54	84
Weiss	26	38 17	76 49	St. Marys	173	123
Welch	2	39 04	76 26	Anne Arundel	7	70
West	30	39 08	76 10	Kent	52	64
West Hollow	24	38 12	76 27	St. Marys	83	82
Westcotts Windmill	30	39 07	76 07	Kent	77	76
Whale (Langford Creek)	30	39 09	76 11	Kent	47	63
Whale (Wye River)	32	38 53	76 08	Talbot	5	56
Wharf (Saxis Pier)	10	37 56	75 44	Virginia	11	³ 54
What	25	38 15	76 40	St. Marys	119	100

¹ See progress map in Somerset County publication.² See Anne Arundel County publication.³ See Somerset County publication.

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

ALPHABETICAL INDEX TO TRIANGULATION STATIONS—Continued.

Name of station	Chart number of Maryland Oyster Chart on which shown	Approximate geographic location		County in which located	County index number by which indicated on Index Chart	Page of U. S. Coast and Geodetic Survey county publication of Survey of Oyster Bars on which locations are described
		Latitude	Longitude			
		° /	° /			
Wheat	19, 20	38 23	76 31	Calvert	33	46
Wheel	32	38 53	76 08	Queen Annes	130	98
Whit	34	38 47	76 09	Talbot	44	144
White	12	38 14	75 54	Wicomico	9	29
White House (N. E. Chimney)	18, 20	38 23	76 24	Calvert	15	32
Whitehall	35	38 35	76 00	Dorchester	10	48
Whitewash	36, 37, 38	38 29	76 17	Dorchester	78	58
Wick	35	38 37	75 58	Dorchester	5	45
Wickes Beach	29	39 02	76 15	Kent	19	40
Wide	32	38 53	76 10	Queen Annes	108	98
Wildcat	15	37 59	75 19	Virginia	19	1 40
Will	10	37 57	75 40	Somerset	52	53
Willey	34	38 45	76 14	Talbot	151	103
Willis	34	38 47	76 15	Talbot	144	100
Wilmers	(²)	39 10	76 03	Queen Annes	3	60
Wilson 2	18	38 26	76 27	Calvert	12	31
Wind	5	38 14	75 52	Somerset	6	35
Windmill 2	40	38 16	76 09	Dorchester	108	91
Windmill Point	29	39 08	76 15	Kent	17	37
Wire	34	38 44	76 16	Talbot	127	94
Woll	30	39 08	76 09	Kent	59	67
Won	32	38 52	76 12	Queen Annes	91	81
Wood (Miles River)	32	38 50	76 12	Talbot	22	63
Woodill	34	38 46	76 15	Talbot	141	99
Woods (St. Clement Bay)	25	38 15	76 43	St. Marys	160	108
Wool	37	38 31	76 15	Dorchester	70	80
Worton Point 2	28	39 19	76 11	Kent	1	28
Wroten	40	38 19	76 11	Dorchester	104	89
Ximo	3	38 57	76 33	Anne Arundel	76	90
Yazoo	3	38 57	76 34	Anne Arundel	77	90

¹ See Worcester County publication.² See progress map in Queen Annes County publication.

LANDMARKS.

U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS.

NUMERICAL INDEX.

NOTE.—See Alphabetical Index for other references relating to triangulation stations.

ANNE ARUNDEL COUNTY.

County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station
1	Rock Point	39	Chase (Severn River)	74	Waggaman
2	Seven Foot Knoll Light	40	Point	75	Ginger
3	Bodkin Point (Old Tower)	41	Bight	76	Ximo
4	Locust (Chesapeake Bay)	42	Arnold	77	Yazoo
5	Peach Hill	43	Swan (Severn River)	78	Taylor (South River)
6	Baltimore Light	44	High (Severn River)	79	Larramore
7	Welch	45	Cedar (Severn River)	80	Brewer (South River)
8	Bluff (Magothy River)	46	Sharp	81	Almshouse (Lightning Rod)
9	Sillery	47	Long (Severn River)	82	Almshouse
10	Phil (Magothy River)	48	Island (Severn River)	83	Cedar (South River)
11	Bay (Magothy River)	49	Bay (Severn River)	84	Mayo
12	Hickory	50	Brewer (Severn River)	85	Selby
13	Dobbins	51	Clem	86	Gowan
14	Iron	52	Salt (Severn River)	87	Dutchman
15	Ham (Magothy River)	53	Luce	88	Cato
16	Bank (Magothy River)	54	Weems	89	Delta (Rhode River)
17	Horn (Magothy River)	55	Field	90	Etna
18	Tail	56	Hospital Cupola (Naval Academy)	91	Calf
19	Ferry (Magothy River)	57	Flag Staff (Naval Academy Boathouse)	92	Turf (Rhode River)
20	Huddle	58	State House Dome	93	Cupola (Rhode River)
21	Revell	59	St. Anne's Church Spire	94	Rhode
22	Purse	60	Catholic Church Spire (Annapolis)	95	Ches
23	Magothy	61	St. John's College Cupola	96	Alpha
24	Corn (Chesapeake Bay)	62	Horn (Severn River)	97	Shell (West River)
25	Sandy Point Light	63	Start	98	Counallor
26	Bay Side	64	Gram (Severn River)	99	Chalk
27	Clump (Chesapeake Bay)	65	Tolly	100	Lerch Windmill
28	Hackett	66	Bay Ridge Stack	101	Apple
29	Spit	67	Cottage (Chesapeake Bay)	102	Cove
30	Chase (Whitehall Bay)	68	Thomas	103	Curtis
31	Greenbury	69	Thomas Point Shoal Light	104	Horseshoe (Chesapeake Bay)
32	Greenbury Point Light	70	Arundel	105	Franklin
33	Fort (Severn River)	71	Hill	106	Nut
34	Bluff (Severn River)	72	Switch	107	Broad (Chesapeake Bay)
35	Brice	73	Waggaman Windmill	108	Parker (Herring Bay)
36	Knob			109	Hopkins (Herring Bay)
37	Spring (Severn River)			110	Fairhaven
38	Cool			111	Holland (Chesapeake Bay)

BALTIMORE COUNTY.

1	Craighill Channel Light (Rear Range)	3	North Point (Old Tower Foundation)	5	Fort Howard Teller Water Tank
2	Craighill Channel Light (Front Range)	4	Cutoff Channel Light (Front Range)	6	Cutoff Channel Light (Rear Range)

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

NUMERICAL INDEX TO TRIANGULATION STATIONS—Continued.

CALVERT COUNTY.

County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station
1	Hog Point (Holland 3)	16	Pat	32	Mackall
2	Beach (Chesapeake Bay)	17	Drum Point Light	33	Wheat
3	Ill 2	18	Bareda House Cupola	34	Peak
4	Plum 3	19	Bon	35	Island (Patuxent River)
5	Pier (Chesapeake Bay)	20	Fishstack	36	Sweep
6	Pen (Chesapeake Bay)	21	K. of P. Flagstaff (Solomons)	37	Slim
7	Patch	22	Sand	38	Photo
8	Parker (Chesapeake Bay)	23	M. E. Church (Solomons)	39	Battle
9	Run	24	Catholic Church Cross	40	Kitt (Patuxent River)
10	Poplar	25	New	41	Sheridan
11	Flag Pond	26	Bur	42	Morsel
12	Wilson 2	27	Ton	43	Buzz
13	Point of Rocks	28	Hellen	44	Dwarf
14	Cove Point Light	29	Stump	45	Hallowing
15	White House (N. E. Chimney)	30	Lend	46	Buena
		31	Sollers	47	Leitch

CHARLES COUNTY.

1	Fodder	7	Stoddard	14	Charles (Wicomico River)
2	Teague	8	Hayden	15	Hard
3	City	9	Burr	16	Rock Point Catholic Church Cross
4	Catholic Church Cross (Benedict)	10	Bowman	17	Corner (Wicomico River)
5	Indian (Patuxent River)	11	Eedling	18	Cobb Point Bar Light
6	Upper	12	Gust		
		13	Hedney		

DORCHESTER COUNTY.

1	Myrtle (Choptank River)	19	Dicks Water Tank	40	Greenwell
2	Hut	20	Howard (Choptank River)	41	Ross (Little Choptank River)
3	House	21	Toot	42	Phil (Little Choptank River)
4	Saw	22	Le Compte	43	Dupont
5	Wick	23	Large Water Tank	44	Beckwith
6	War	24	Castle	45	Cherry Island Water Tank
7	Gander	25	Corner (Choptank River)	46	Lee
8	Chief	26	Dot	47	Solomon
9	Shell (Choptank River)	27	Chef	48	Seth (Little Choptank River)
10	Whitehall	28	Cook Point Windmill	49	Adam
11	Ferry (Choptank River)	29	Brannock	50	Layton
12	Shoal	30	Robins	51	David
13	E. Cambridge Spire	31	Ragged Point 3	52	Town (Little Choptank River)
14	E. Cambridge Tall Stack	32	Hudson	53	Sweep
15	Cambridge Stand Pipe	33	Jenifer	54	Hugh
16	Cambridge	34	Henry	55	Etta
17	Hambrooks Bar Beacon	35	Mitchell	56	Mary
18	Command	36	Back	57	Neil
		37	Bayly		
		38	Carrie		
		39	Louise		

NUMERICAL INDEX TO TRIANGULATION STATIONS—Continued.

DORCHESTER COUNTY—Continued.

County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station
58	Kirby	82	Skid	106	Lakes
59	Paul (Little Choptank River)	83	Rede	107	Asquith
60	Church Creek (No 1 West)	84	James (Chesapeake Bay)	108	Windmill 2
61	Austin	85	Travers 2	109	Paul (Honga River)
62	Tom (Little Choptank River)	86	Dunnock	110	Duck (Honga River)
63	Brooks	87	Mint	111	St. Thomas Church Spire
64	Doctor (Little Choptank River)	88	North	112	Norman (Honga River)
65	Eleanor	89	Hosier Memorial Church Spire	113	Hooper Strait Light
66	Laney	90	South (Barren Island)	114	Head
67	Mac	91	Mt. Zion M. E. Church Spire	115	Croch
68	Madison Southern M. E. Church Spire	92	Hooper Island Light	116	Roast
69	Tobacco Stick	93	Applegarth	117	Toddville M. E. Church Spire
70	Wool	94	Okahanikan	118	Farm
71	Pov	95	Holland Island Church Spire	119	Thoro
72	Torrey	96	Crab	120	High (Honga River)
73	Maryland	97	Hopkins Memorial Church Cupola	121	Elliott
74	Noble	98	Hoopersville Methodist Church Cupola	122	Ear
75	Finish	99	Bentley	123	Fish
76	Taylor (Slaughter Creek)	100	Bridge (Honga River)	124	Sharkin Shoal Light
77	Harrington	101	Gunners	125	Frog
78	Whitewash	102	Keenes	126	Cow
79	Moore	103	Kerwin	127	Okay
80	Veith	104	Wroten	128	Ar
81	Can	105	Charles (Honga River)	129	Gover
				130	Streett

HARFORD COUNTY.

1	Pooles Island Light	2	Pooles Island 2		
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KENT COUNTY.

1	Worton Point 2	17	Windmill Point	31	Herring
2	Bramble	18	Stevens	32	No Road
3	Mitchells Bluff 2	19	Wicks Beach	33	Cut
4	Swan Point 3	20	Narrows Point	34	Fore
5	Bank (Swan Creek)	21	Rain	35	Island (Grays Inn Creek)
6	Tavern	22	Overton	36	Tray
7	Fork	23	Bay Bush Point	37	Inn
8	Elliason	24	Little Gum	38	Deep Cove
9	Urie	25	Weeks	39	Snub
10	Corr	26	Spring (Grays Inn Creek)	40	Lawyer
11	Spike	27	Lucy	41	Drum (Langford Creek)
12	Rail (Swan Creek)	28	Goose (Grays Inn River)	42	Davis
13	Haven	29	Prussian	43	Isle
14	Treasure	30	Gray	44	Eagle (Langford Creek)
15	Orchard			45	Ford (Langford Creek)
16	Gratitude				

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

NUMERICAL INDEX TO TRIANGULATION STATIONS—Continued.

KENT COUNTY—Continued.

County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station
46	Kinsley	61	Clay	77	Westcotts Windmill
47	Whale (Langford Creek)	62	Lovely	78	Deep Point 2.
48	Bungay	63	Gut	79	Thorn.
49	Locust (Langford Creek)	64	Philip (Langford Creek)	80	Shippen
50	Nat (Langford Creek)	65	Ide	81	Oyster (Chester River)
51	Mill (Langford Creek)	66	Hoo	82	Jarrett
52	West	67	Cult	83	Melton
53	Hornor	68	Wann	84	Pomona
54	King	69	Corn (Langford Creek)	85	Taste
55	Ash	70	Neck (Langford Creek)	86	Make
56	Noth	71	Major	87	Broad (Chester River)
57	Leary	72	Peach	88	Nils
58	Nest	73	Langford	89	Robertson Windmill
59	Woll	74	Quaker	90	Robertson (Chester River)
60	Harp	75	Brown	91	Thorsten
		76	Stratton	92	Blank

PRINCE GEORGE COUNTY.

1	Prince				
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QUEEN ANNES COUNTY.

1	Rolphs	30	Crow	59	Liver
2	Southeast	31	Bird	60	Tuxon
3	Wilmsers	32	Gordon	61	Steve
4	Julius	33	Fir.	62	Thompson (Cox Creek)
5	Down	34	Break	63	Hope
6	Bill	35	Blakeford	64	Knock
7	Cake	36	Bluebeard	65	Landing
8	Journey	37	Muddy	66	Timber
9	Booker	38	Thin	67	Ville (Cox Creek)
10	Starkley	39	Macum	68	Greek
11	Burns	40	Railway Water Tank	69	Tom (Cox Creek)
12	Ashland	41	Amour	70	Dell
13	Indian (Chester River)	42	Love Point Light	71	Turkey
14	Corpse	43	Ring	72	Needle
15	Chester (Chester River)	44	Wash	73	Cox (Crab Alley Bay)
16	Evans	45	Craney	74	Tull
17	Spaniard Pt. (2 Upper)	46	Bloody Point Bar	75	Over
18	Corsica	47	Light	76	Norman (Eastern Bay)
19	Sweepson	48	Tenk	77	Parsons
20	Engineer	49	Straight (Eastern Bay)	78	Parsons Island Water Tank
21	Ship	50	Matta	79	Alley
22	Bath	51	Then	80	New Barn Cupola
23	Melfield	52	Some	81	Dull
24	Ruth	53	Batts	82	Kirwan
25	Hydrographic	54	Top	83	Bridge (Kent Island Narrows)
26	Earle (Corsica River)	55	Ware	84	Railroad
27	Holton Point	56	Coffee	85	Marshy
28	Reeds (Chester River)	57	Here	86	Bonnet
29	Grove (Reeds Creek)	58	Samuel (Cox Creek)		

NUMERICAL INDEX TO TRIANGULATION STATIONS—Continued.

QUEEN ANNES COUNTY—Continued.

County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station
87	Brian Reference Sta- tion	101	Oysters (Wye River)	116	Albert
88	Green (Eastern Bay)	102	Bee	117	Le Seur
89	Benn	103	Close	118	Attila
90	Hough	104	June	119	Tobine
91	Won	105	Chin	120	Sang
92	Nose	106	Aller	121	Turn
93	Stop	107	Twist	122	Go
94	Orb	108	Wide	123	Divide
95	Piney	109	Darce	124	Princess
96	Ferry (Wye River)	110	Twixt	125	Philip (Wye River)
97	Owe	111	Star	126	Granary
98	Hook	112	Leaven	127	Morn
99	Knee	113	Snout	128	Bush
100	No	114	South (Wye River)	129	Nub
		115	Flat (Wye River)	130	Wheel

ST. MARYS COUNTY.

1	Sothoron	37	Hall House (Middle Chimney)	72	Brome
2	Billiard			73	Calvert Monument
3	Trent	38	Sig	74	Episcopal Church Cross (Old St. Marys)
4	Collins	39	Red Beacon (1908)		
5	Cremona	40	Dago	75	Bend
6	Oppkit	41	Pipe	76	Horseshoe (St. Marys River)
7	Fight	42	Pier (Smith Creek)	77	Martin (St. Marys Riv- er)
8	Forr	43	Enough	78	Hammett
9	Cole	44	Drum (Smith Creek)	79	McCoy
10	Hutchins	45	In	80	Soak
11	Bars	46	Out	81	Tenuate
12	Stock	47	Jutland	82	Brief
13	Briscoe	48	Flagpole	83	West Hollow
14	Nat (Patuxent River)	49	Ran 2	84	Pagan
15	Mill (Patuxent River)	50	Flat (Smith Creek)	85	Deep
16	Cable	51	Stung	86	McKay
17	Town (Patuxent Riv- er)	52	Oak	87	Water Tower (Porto Bello)
18	Crane	53	Tab	88	Bello
19	Ben	54	Day	89	Coppage
20	Craddock	55	Between	90	Grind
21	Carroll 2	56	Fort (St. Marys River)	91	Thompson (St. Marys River)
22	Hog 2	57	Rod (Priest's House)	92	Pond
23	Cedar Point Light	58	Raley	93	Cherry
24	Cain	59	St. Inigoes Church	94	Price
25	Desert		Cross	95	Goose (St. George Riv- er)
26	Ford (Chesapeake Bay)	60	Church	96	Combs (Honga River)
27	Reed (Chesapeake Bay)	61	Grason	97	Taylor (St. George River)
28	Point Agin	62	Smoke	98	Tarkhill
29	Point No Point	63	Chestnut	99	Arbuckle
30	Point No Point Light	64	Sleep	100	Lowell
31	St. Jerome	65	Rock	101	Shehan
32	St. Michael Catholic Church Spire	66	Dusky	102	Chadwick
33	Point Look-in	67	Cottage (St. Inigoes Creek)		
34	Potomac	68	Inigoes		
35	Point Lookout Light	69	Kennedy		
36	Hall (Potomac River)	70	Chan		
		71	Gravel		

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

NUMERICAL INDEX TO TRIANGULATION STATIONS—Continued.

ST. MARYS COUNTY—Continued.

County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station
103	Guither	131	Healey (Bretons Bay)	157	Profound
104	Wall (St. George River)	132	Hollow	158	Mileys
105	Russell	133	Trees	159	Shipping
106	Robrecht	134	Paw	160	Woods (St. Clement Bay)
107	Swan (St. George River)	135	Cherry Cove	161	Canoe
108	Straits (St. George River)	136	Compton	162	St. Patrick
109	Adams	137	Sandbar	163	Blakistone Island Light
110	Smack	138	Newtown	164	Heron
111	Labor	139	Kaywood	165	River Springs Catholic Chapel Cross
112	St. George 4	140	St. Clement	166	Waterloo
113	Piney Point Light	141	Roof	167	St. Catherine
114	Cedoak	142	Rails (St. Clement Bay)	168	Bailey
115	Grove (Bretons Bay)	143	Catholic Church Cross (Newtown Neck)	169	Sound
116	Dune	144	Chapel	170	St. Margaret 2
117	Fence	145	Mansion	171	Prec
118	Protestant	146	Howards (St. Clement Bay)	172	Blakistone
119	What	147	Bank (St. Clement Bay)	173	Weiss
120	Lovers	148	Cecil	174	Sacred Heart Church Spire (Bushwood)
121	Beau	149	Place	175	Lyon
122	Mouldy	150	Guest	176	Farr
123	Pine (Bretons Bay)	151	Stones	177	Fact
124	Cedar (Bretons Bay)	152	Turf (St. Clement Bay)	178	Perry
125	Corn (Bretons Bay)	153	Dynard	179	Cohouck
126	Valley	154	Tomakokin	180	Key
127	Foxwell	155	Coburns	181	Barber (Wicomico River)
128	Buzzard	156	Radec		
129	Noname				
130	Belle				

SOMERSET COUNTY.

1	Walnut	23	Sandy	43	Emanuel Church
2	Jones	24	Locust (Manokin River)	44	Mount Pleasant Church
3	Ivee	25	Fitz	45	Asbury Church
4	Mount Vernon M. E. Church	26	Wab	46	Sam
5	Ball (Wicomico River)	27	Pen (Manokin River)	47	Watermelon Hummock
6	Wind	28	Cox (Manokin River)	48	East
7	Little	29	Green (Manokin River)	49	Monkey
8	Dove	30	Barn	50	Scot
9	Short	31	Cupola (Manokin River)	51	Old
10	Room	32	Staff	52	Will
11	Haines	33	Fairmount Church	53	Holland Island Bar Light
12	Deal Island Church	34	Prickly	54	Fog 2
13	Bar (Tangier Sound)	35	Has	55	Joseph
14	Joshua	36	Ford (Big Annemessex River)	56	North Church Spire (Smith Island)
15	Senator	37	Moon	57	Old Church Spire (Smith Island)
16	Miles	38	Colburn	58	Ewell Church Spire (Smith Island)
17	Solomons Lump Light	39	Geog		
18	Terrapin	40	Flat Cap		
19	Kelley	41	Janes Island Light		
20	Marsh (Manokin River)	42	Somers Cove Light		
21	St. Pierre				
22	Jean				

NUMERICAL INDEX TO TRIANGULATION STATIONS—Continued.

TALBOT COUNTY.

County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station
1	Pick	58	Kirk	112	Bozman
2	Corner (Wye River)	59	Ham (Miles River)	113	Bozman M. E. Church
3	Right	60	Comb (Miles River)		Spire
4	Chew	61	Hall (Miles River)	114	Koot
5	Whale (Wye River)	62	Barnett	115	Fox
6	Matter	63	Malden	116	Dan
7	Deck	64	Stony	117	Edmond
8	Quarter	65	St. Michaels P. E.	118	Warrior
9	Nodim		Church Spire	119	Ball (Harris Creek)
10	Gusta	66	St. Michaels Water	120	Hen
11	Sylvia		Tank	121	Change 1910
12	Baldwins	67	Millwind	122	Nelson 3
13	Cousin	68	Deewat	123	Annette
14	Lloyd	69	Spar	124	Myrtle (Broad Creek)
15	Edward	70	Sara	125	Coal
16	Colonel	71	Seth (Miles River)	126	Tohe
17	Shaw	72	Pearson	127	Wire
18	Bruffs	73	Dixon	128	Blanco
19	Law	74	Rich Neck Water Tank	129	Ned
20	James (Miles River)	75	Kemp Tower	130	Caulk
21	Frank	76	Kemp	131	Fairbanks
22	Wood (Miles River)	77	Haddaway	132	Pine (Broad Creek)
23	Herr	78	Valliant	133	Luna
24	Ollie	79	Poplar South	134	Cabin
25	Swing	80	Great	135	Skinner
26	Fair	81	Front	136	Bald
27	Second	82	Wap	137	Rose
28	But	83	Southern M. E. Church	138	Gram (Broad Creek)
29	Aber	84	Black	139	Bengal
30	Two	85	Sharps Island Light	140	Eastman
31	Face	86	Jere	141	Woodlill
32	Mais	87	Bar (Harris Creek)	142	Delta (Broad Creek)
33	Beak	88	M. E. Church (Tilgh-	143	Marion
34	Rieman		man Island)	144	Willis
35	Leeds	89	Avalon	145	Neptune
36	Margo	90	Schoolhouse Cupola	146	Venus
37	Gibbs	91	Peoples Chapel	147	Mars
38	Long (Miles River)	92	Narrows	148	Royal
39	Beg	93	Eagle (Harris Creek)	149	Grave
40	Search	94	Dunk	150	Ray
41	Tug	95	Hawk	151	Willey
42	Hunting	96	Smith	152	Judge
43	Spree	97	Briary	153	Thelma
44	Whit	98	Vine	154	Elmore
45	Dorrance	99	Cummings	155	Beverly
46	Tang	100	Dog	156	Samuel (Broad Creek)
47	Johnson	101	Rabbit	157	Ansley
48	Lowndes	102	Grace	158	Harper
49	Draw	103	Mink	159	Taft
50	Chap	104	Harrison	160	Hopkins (Broad Creek)
51	Villa (Miles River)	105	Clump (Harris Creek)	161	Spencer
52	Easton	106	Lawn	162	Marshall
53	Henderson	107	End (Harris Creek)	163	Clark
54	Bethel	108	Rod (Harris Creek)	164	Holly
55	Fig	109	Otto	165	Marsh (Broad Creek)
56	Doctor (Miles River)	110	Miller	166	Cedar (Broad Creek)
57	McConnell	111	Pink	167	Ross (Broad Creek)

SUMMARY OF SURVEY OF OYSTER BARS OF MARYLAND.

NUMERICAL INDEX TO TRIANGULATION STATIONS—Continued.

TALBOT COUNTY—Continued.

County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station
168	Cook	201	Wall (Tred Avon River)	234	Show
169	Peary			235	Kit (Island Creek)
170	Roys	202	Aye	236	Moke
171	Irish	203	Hunter	237	Poco
172	Pont	204	Weave	238	Healey (Island Creek)
173	Sticky	205	Twin	239	Maslin
174	Vue	206	Toe	240	Mean
175	Ila	207	Trippe	241	Jay
176	Creek (Irish Creek)	208	Venture	242	Berry
177	Benoni 2	209	Plow	243	Landeye
178	Mutton	210	Higher	244	Choptank River Light
179	Tred	211	All	245	Chlora
180	Bellevue	212	Cam	246	Trappe
181	Tar	213	Deux	247	Lan
182	Peck	214	Crack	248	Rice
183	Tall	215	Mistle	249	Inez
184	Plain	216	Layor	250	Gis
185	Spin	217	Borough	251	Grubin
186	Martin (Tred Avon River)	218	Golds	252	Black Beacon
187	Neva	219	Mud (Tred Avon River)	253	Howells
188	Robertson (Tred Avon River)	220	Town (Tred Avon River)	254	Red
189	Stretch	221	Riverview	255	Double
190	May	222	Weather Bureau Staff	256	Boling
191	Peebee	223	First	257	Rear
192	Neck (Tred Avon River)	224	Bach	258	Chancellor
193	Stab	225	Boone	259	Barber (Tred Avon River)
194	Water	226	Enter	260	Duck (Choptank River)
195	Radcliffe	227	Straw	261	Jam
196	Bateman	228	Delahay	262	Spindle
197	Melon	229	Kent	263	Bank (Tred Avon River)
198	Gash	230	Harry	264	Raccoon
199	Camden	231	Charles (Island Creek)	265	Blind
200	Blossom	232	Potato	266	Up
		233	Ritter		

VIRGINIA.

1	Herring Pond 2	9	Fox Island Poplar	17	Grace M. E. Church
2	Lynch Point 3	10	Mos	18	Long Point
3	Smith Point Light	11	Wharf (Saxis Pier)	19	Wildcat
4	Shanks Hammock 2	12	Saxis Church Spire	20	Pope Island Life-Saving Station
5	Horse	13	Oil	21	Chester (Virginia)
6	Fishbone	14	Summer	22	Killick Shoal Light
7	Reach Hammock	15	Cup	23	Assateague Light
8	Beacon	16	Money		

NUMERICAL INDEX TO TRIANGULATION STATIONS—Continued.

WICOMICO COUNTY.

County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station	County index number indicating station on Index Chart	Name of station
1	Earle (Nanticoke River)	7	Roar	13	Child
2	Juliet	8	Nanti	14	Creek (Wicomico River)
3	Pole	9	White	15	End (Wicomico River)
4	Bivalve Church	10	Great Shoals Light		
5	Rag	11	Ella		
6	Nanticoke Church	12	Holland (Wicomico River)		

WORCESTER COUNTY.

1	Hamilton	17	Sanpoi	31	Green Run Inlet Life-Saving Station Flag-staff
2	Ocean City Water Tower	18	Mud (Sinepuxent Bay)	32	Tizz
3	Harmon	19	Ingraya	33	Mill (Chincoteague Bay)
4	Ocean	20	Salt (Sinepuxent River)	34	Maryland-Virginia (Life-Saving Station Beach)
5	Buffing	21	North Beach Life-Saving Station	35	Maryland-Virginia (Pope Island)
6	Buffington Windmill	22	Birch	36	Maryland-Virginia (Railroad)
7	Gull	23	Neck (Chincoteague Bay)	37	Thorofare
8	Inkquill	24	Newport	38	Collier
9	Seaside	25	Handys Hammock	39	Convent Water Tower
10	Ellpow	26	Ricks	40	Gantt
11	Beach (Sinepuxent Bay)	27	Guilberts Cupola		
12	Fassett	28	Beacon Clumps		
13	Shore	29	Landlet		
14	Nellys	30	Turnagain		
15	Bar (Sinepuxent Bay)				
16	Longwells Windmill				

DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY
O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

ANNE ARUNDEL COUNTY
MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND REPORT
OF WORK OF UNITED STATES COAST AND GEODETIC SURVEY
IN COOPERATION WITH MARYLAND SHELL FISH COMMISSION

By C. C. YATES

ASSISTANT AND CHIEF OF PARTY, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1907

DEPARTMENT OF COMMERCE AND LABOR

Document No. 77.

COAST AND GEODETIC SURVEY

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, June 1, 1907.

SIR: I have the honor to transmit herewith the report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Maryland Shell Fish Commission in surveying the oyster beds of the State of Maryland, under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and certain results which are necessary for the interpretation and use of the plats of the survey.

Respectfully,

O. H. TITTMANN, *Superintendent.*

TO HON. OSCAR S. STRAUS,
Secretary of Commerce and Labor.

CERTIFICATION.

ANNAPOLIS, MD., *May 29, 1907.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in Anne Arundel County and contiguous waters by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,

Assistant and Chief of Party in the Coast and Geodetic Survey.

ANNAPOLIS, MD., *June 6, 1907.*

Examined and certified to be correct.

WALTER J. MITCHELL,

BENJAMIN K. GREEN,

CASWELL GRAVE,

Maryland Shell Fish Commissioners.

SWEPSON EARLE,

Hydrographic Engineer.

NOTE.—Copies of this publication and of the charts of the natural oyster bars of "Anne Arundel County and Adjacent Waters" were filed in the office of the clerk of the circuit court of Anne Arundel County and in the office of the Board of Shell Fish Commissioners at Annapolis on June 20, 1907.

CONTENTS.

	Page.
LETTER OF SUBMITTAL.....	3
CERTIFICATION.....	5
INTRODUCTION:	
Publications.....	13
Cooperation of the Coast and Geodetic Survey.....	13
Laws relating to the cooperation.....	14
CHARTS AND MAPS:	
Charts of natural oyster bars.....	17
Projections.....	18
Progress map.....	18
BOUNDARIES OF COUNTY WATERS:	
Waters within territorial limits of the county.....	19
Waters contiguous to the county.....	20
Limits of dredging area adjacent to Craighill Channel.....	20
List of natural oyster bars within dredging area of county.....	21
BOUNDARIES OF NATURAL OYSTER BARS:	
Explanation of descriptions of boundaries.....	21
Surveying methods for relocation of boundaries.....	23
Natural oyster bars—	
<i>Chart No. 1</i> (Fort Carroll to Magothy River)—	
Lumps East of Craighill Channel (see also Chart No. 2).....	26
Bodkin Point North.....	26
Bodkin Point South.....	27
Mountain Point (see also Chart No. 2).....	27
Sillery Bay.....	28
<i>Chart No. 2</i> (Magothy River to Annapolis Roads)—	
Lumps East of Craighill Channel (see also Chart No. 1).....	26
Mountain Point (see also Chart No. 1).....	27
Peach Hill.....	28
Welch.....	28
Park.....	29
Umphasis.....	29
Black.....	29
Persimmon.....	30
Outer Magothy.....	30
Sandy Point North.....	31
Sandy Point South.....	31
Hackett Point.....	32
Whitehall Creek.....	32
Sand Spit.....	33
Whitehall.....	33
Wreck Buoy.....	34
Tolly Point (see also Chart No. 3).....	34
Chinks Point.....	35
Inside Greenbury Point.....	35

BOUNDARIES OF NATURAL OYSTER BARS—Continued.

Natural oyster bars—Continued.

Chart No. 2 (Magothy River to Annapolis Roads)—Continued.

	Page
Horn Point.....	36
Old Fort.....	36
Little Sandy.....	37
Creces Cove.....	37
Ferry Point.....	37
Peach Orchard.....	38
Weems Lower.....	38
Weems Upper.....	39
Wade.....	39
Traces Hollow.....	40
Sharp Point.....	40
Saltwork.....	41
Rock Point Lower.....	41
Chase.....	41
Clem Point.....	42
Point.....	42
Aisquith Creek.....	42
Brewer (Severn River).....	43
Poppin Point.....	43
Arnold Point.....	44
Big Island.....	44
Round Bay.....	44
Rock Point Upper.....	45

Chart No. 3 (Annapolis Roads to Horseshoe Point)—

Tolly Point (see also Chart No. 2).....	34
Under The Gums.....	45
Thomas Point North.....	46
Thomas Point South.....	47
Old Woman.....	47
Marshy Point.....	48
Turkey Point.....	48
Ruler Flats.....	49
Swan Reef.....	49
Outer Round Point.....	50
Inner Round Point.....	50
Hill Point East.....	50
Hill Point.....	51
Rock Point (South River).....	51
Fox Point.....	51
Purdy Flats.....	52
Thunder and Lightning.....	52
Brewer (South River).....	52
Almshouse.....	53
Duvall.....	53
Aberdeen.....	54
Beard Point.....	54
Rough Point.....	54
Saunders.....	55
Lulu.....	55
Dutchman.....	56
Three Sisters.....	56
Curtis.....	57

Contents.

9

BOUNDARIES OF NATURAL, OYSTER BARS—Continued.

Page.

Natural oyster bars—Continued.

Chart No. 3 (Annapolis Roads to Horseshoe Point)—Continued.

Collins Flats.....	57
Potato Hill.....	57
Cedar Point.....	58
Barren Neck.....	58
Tucker.....	59
Cheston Point.....	59
Dutchman Hollow.....	59
Brice Fence.....	60
Stony Hollow.....	60
Cherry.....	60
Jackass.....	61
Bolston Bank.....	61
High Island.....	61
Flat Island.....	62
Buce.....	62

Chart No. 4 (Horseshoe Point to Holland Point)—

Bay Shore.....	63
Long.....	64
Fairhaven.....	64
Holland Point.....	65

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):

Explanation of description of landmarks.....	65
--	----

Triangulation stations—

Chart No. 1 (Fort Carroll to Magothy River)—

North Point (Old Tower).....	67
Craighill Channel Light (Front Range).....	67
Rock Point.....	67
Seven Foot Knoll Light.....	68
Bodkin Point (Old Tower).....	68
Locust.....	68
Bay (Magothy River).....	68
Phil.....	69
Hickory.....	69
Sillery.....	69

Chart No. 2 (Magothy River to Annapolis Roads)—

Peach Hill.....	70
Welch.....	70
Bluff (Magothy River).....	70
Dobbins.....	71
Iron.....	71
Ham.....	71
Bank.....	71
Horn (Magothy River).....	72
Tail.....	72
Ferry.....	72
Huddle.....	73
Revell.....	73
Purse.....	73
Magothy.....	74
Corn.....	74
Sandy Point light.....	74
Ring (see progress map).....	74

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued. Page.

Triangulation stations—Continued.

Chart No. 2 (Magothy River to Annapolis Roads)—Continued.

Bay Side	75
Clump	75
Wash (see progress map).....	75
Hackett	76
Spit	76
Chase (Whitehall Bay).....	76
Greenbury	77
Greenbury Point light.....	77
Fort	77
Bluff (Severn River)	77
Brice	78
Knob	78
Spring	78
Cool	79
Chase (Severn River)	79
Point	79
Bight	80
Arnold	80
Swan	80
High	81
Cedar (Severn River)	81
Sharp	81
Long	82
Island	82
Bay (Severn River)	82
Brewer (Severn River).....	83
Clem	83
Salt	83
Luce	84
Weems	84
Field	84
Hospital Cupola (Naval Academy).....	85
Flag Staff (Naval Academy Boathouse)	85
State House Dome (Annapolis).....	85
St. Anne's Church Spire (Annapolis).....	85
Catholic Church Spire (Annapolis)	85
St. John's College Cupola (Annapolis)	85
Horn (Severn River).....	85
Start	86

Chart No. 3 (Annapolis Roads to Horseshoe Point)—

Gram	86
Tolly	86
Bay Ridge Stack	87
Craney	87
Cottage	87
Thomas	88
Thomas Point Light.....	88
Arundel	88
Hill	88
Switch	89
Waggaman	89
Waggaman Windmill	89

Contents.

II

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued. Page.

Triangulation stations—Continued.

Chart No. 3—(Annapolis Roads to Horseshoe Point)—Continued.

Ginger.....	90
Ximo.....	90
Yazoo.....	90
Taylor.....	91
Larramore.....	91
Brewer (South River).....	91
Almshouse.....	92
Almshouse (Lightning Rod).....	92
Cedar (South River).....	92
Mayo.....	92
Selby.....	93
Gowan.....	93
Dutchman.....	93
Cato.....	94
Delta.....	94
Etna.....	94
Calf.....	95
Turf.....	95
Cupola.....	95
Rhode.....	95
Ches.....	96
Alpha.....	96
Shell.....	96
Counallor.....	97
Chalk.....	97
Lerch Windmill.....	97
Apple.....	98
Cove.....	98
Curtis.....	98
Horseshoe.....	99
Bloody Point Bar light.....	99

Chart No. 4 (Horseshoe Point to Holland Point)—

Franklin.....	99
Nut.....	99
Broad.....	100
Parker.....	100
Hopkins.....	100
Fairhaven.....	101
Holland.....	101

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:

Instructions.....	102
House boat <i>Oyster</i>	102
Organization and equipment.....	103
Field work.....	104
Office work.....	105
Summary.....	105

PROGRESS MAP..... following 109

SURVEY OF OYSTER BARS, ANNE ARUNDEL COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the natural oyster bars of Maryland has been divided between the Government and the State in accordance with the laws authorizing the work and the natural division of the surveying operations of the cooperating forces.

The part prepared under the direction of the Superintendent of the Coast and Geodetic Survey consists of this publication and a series of large-scale charts. The charts show all legal boundaries of natural oyster bars within the waters opened up for leasing with Anne Arundel County and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used in connection with the delineation of these boundaries. This publication gives a technical description of the oyster-bar boundaries and landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey.

The part to be published by the Shell Fish Commission will include a report of the work executed by the commission under the provisions of the oyster-culture laws of Maryland, descriptions of oyster investigations and the delimitation of oyster bars, and other important legal and scientific information.

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data for all surveying, charting, and other allied purposes within the area of the operations of the service, the cooperation of the Coast and Geodetic Survey with the Maryland Shell Fish Commission is a practical and useful development of Government work.

Survey of Oyster Bars, Anne Arundel County, Md.

LAWS RELATING TO THE COOPERATION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying and publishing charts of natural oyster bars, establishing permanent landmarks over triangulation stations, and preparing for publication the necessary technical and legal descriptions of boundaries and landmarks delineated on the charts, has been executed in compliance with a request from the Governor of the State of Maryland to the Secretary of Commerce and Labor, and by authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the Shell Fish Commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the Board of Shell Fish Commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved March 4, 1907.]

AN ACT making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the Shell Fish Commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of the legislature of Maryland approved April 2, 1906.]

AN ACT to establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this act, and * * *

SECTION 1. *Be it enacted by the general assembly of Maryland,* That the following sections be, and they are hereby, added to article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this act, cause to be made a true and accurate survey of the natural oyster beds, bars, and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as herein-after required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States Coast and Geodetic Survey, which said copies shall be filed in the office of the said Commissioners in the city of Annapolis; and the said Commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States Coast and Geodetic Survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars, and rocks, all natural beds, bars, and rocks lying within the waters of such county, which maps shall be filed in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie.

SEC. 87. The governor of this State is hereby requested to ask the assistance of the United States Coast and Geodetic Survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section. * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said Commissioners shall organize and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States Coast and Geodetic Survey, and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed, and designated on the said charts the natural beds, and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks, as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said Board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks as shown by a delineation on the maps and charts provided in this act; said report shall be completed and filed in the office of the Board in the city of Annapolis within ninety days after the completion of the survey of any county. Said Commissioners shall cause the same to be published in pamphlet form, and transmit copies of the same to the clerk of the circuit court for the respective counties, where the charts have been filed or directed to be filed, as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars, and rocks lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars, or rocks lying within the waters of the counties wherein such report and survey are filed other than those embraced in the survey authorized by this act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland not shown in the survey to be natural oyster beds, bars, or rocks shall be construed in all the courts of the State to be barren bottoms, and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this act; provided that the said survey and report shall not be so construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this act. * * *

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the U. S. Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the Survey, is as follows:

AN ACT concerning the survey of the coast of Maryland.

SECTION 1. *Be it enacted by the general assembly of Maryland*, that it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or leveling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2. *And be it enacted*, That in case the person or persons employed under the act of Congress aforesaid can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees, or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being, or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and, if required, upon the evidence of witnesses (to be by them sworn or affirmed and examined), shall assess the said damages, and shall afterwards make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid, if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid shall have authority to tax and allow, upon the filing of said report, such costs, fees, and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of Congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid ensuing upon and after said appeal, and it shall be lawful for either party immediately after the entry of such appeal to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against whichever the final judgment shall be entered, and such appeal, at the option of either party, may and shall be heard before, and the damages assessed by, a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument, or building, or any appendage thereto, erected, used, or constructed under and by virtue of the act of Congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars, with costs of suit, to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts^a of the natural oyster bars of "Anne Arundel County and Adjacent Waters," published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, consist of a series of four sheets, covering the west shore of Chesapeake Bay from Fort Carroll to Holland Point. They are published on the scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inches to a statute mile), and are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bar and other boundaries established by the Commission, and are certified by them for the purpose of filing in the office of the clerk of the circuit court of Anne Arundel County and in the office of the Commission at Annapolis, as required by the oyster-culture laws of Maryland.

In addition to the boundaries, the charts show the location and name of all landmarks (U. S. Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography necessary to make the technical definitions and delineations of boundaries readily understandable, both by the people engaged in oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission, and are not designated by numbers, as might suggest itself on first thought as being the best method when the great number of oyster bars in the whole State are considered. By the use of local names, it is believed that much confusion will be avoided in the location of oyster bars, especially by those not familiar with charts.

The corners of the oyster bars are numbered from 1 to the total number of corners in each bar under consideration. Where bars adjoin, making one point a corner of two or more bars, these points have two or more numbers, each corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions given in this publication under the heading "Boundaries of natural oyster bars."

The natural oyster bars and landmarks have been grouped in the contents of this publication in accordance with the charts upon which they are shown. To find a particular oyster bar or landmark which is only known by name, consult the "Contents," and the desired chart and general location will be indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

The contours for the depth of water at mean low tide have been taken from the hydrographic sheets of the Coast and Geodetic Survey at Washington. Four curves

^aFor copies of these charts apply to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in the oyster industry. The 1-fathom contour (6 feet) and the 5-fathom contour (30 feet) practically include all the natural oyster bars surveyed, while the 3-fathom contour (18 feet) furnishes the curve of about the average depth. The 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the territorial limits of the county and the boundaries of waters not within these limits but opened up for the leasing with the county are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the natural oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements made of the area of the bars as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures on the face of the chart within the boundaries of the bars.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the notes on the charts.

PROJECTIONS.

The polyconic projections, like the charts which are described in the preceding section, were all constructed by draftsmen of the Coast and Geodetic Survey. These draftsmen also plotted the sextant positions on the smooth projections which determine the location of the legal boundaries of the natural oyster bars as delineated by the Shell Fish Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the commission, by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all natural oyster bar and other boundaries established by the commission. One set of these projections is filed in the archives of the Coast and Geodetic Survey at Washington and the other set is filed in the office of the Shell Fish Commission at Annapolis.

PROGRESS MAP.

The progress map^a attached to this publication is on a scale of one part in a hundred thousand, and shows in outline the work accomplished by the U. S. Coast and Geodetic Survey in Anne Arundel County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey of the natural oyster bars, the location and names of all triangulation stations used as a basis for the surveying work, and the "Boundaries of county waters" established

^a For this map, see folder at end of this publication.

by the commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, the progress map will be of special value for index purposes to engineers and others, searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

BOUNDARIES OF COUNTY WATERS,

WATERS WITHIN TERRITORIAL LIMITS OF THE COUNTY.

The laws relating to oyster culture under which the Maryland Shell Fish Commission is executing its survey, provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line^a between the waters "within the territorial limits" of Anne Arundel County and the waters in "any other place," as established by the Shell Fish Commission and delineated on the charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Commencing at a point defined by the intersection of the northern boundary line of Anne Arundel County with the center line of Fort McHenry Channel; thence along the center line of Fort McHenry Channel past Fort Carroll to a point at the intersection of the center line of Fort McHenry Channel and the center line of Brewerton Channel; thence along the center line of Brewerton Channel to a point defined by the intersection of the center line of Brewerton Channel and a straight line between North Point (Old Tower) and a point defined by latitude $39^{\circ} 09' 59.3''$ and longitude $76^{\circ} 28' 39.7''$, situated on Rock Point; thence in a straight line to a point defined by latitude $39^{\circ} 09' 59.3''$ and longitude $76^{\circ} 28' 39.7''$ situated on Rock Point; thence following the mean low-water line along the shore of the bay to a point defined by latitude $39^{\circ} 08' 10.6''$ and longitude $76^{\circ} 26' 21.2''$, situated on Frankie Point; thence in a straight line across the mouth of Bodkin Creek to a point situated at the center of the old light-house tower on Bodkin Point; thence following the mean low-water line along the shore of the bay to a point defined by latitude $39^{\circ} 03' 35.2''$ and longitude $76^{\circ} 25' 56.4''$, situated on Mountain Point; thence in a straight line across the mouth of Magothy River to a point defined by latitude $39^{\circ} 03' 11.1''$ and longitude $76^{\circ} 26' 18.7''$, situated on Persimmon Point; thence following the mean low-water line along the shore of the bay around Sandy Point to a point defined by latitude $38^{\circ} 59' 10.1''$ and longitude $76^{\circ} 25' 33.4''$, situated on Hackett Point; thence in a straight line across the mouth of Whitehall Bay to a point defined by latitude $38^{\circ} 58' 25.0''$ and longitude $76^{\circ} 27' 19.0''$, situated on Greenbury Point; thence in a straight line across the mouth of Severn River to a point defined by latitude $38^{\circ} 56' 28.0''$ and longitude $76^{\circ} 27' 00.0''$, situated on Tolly Point; thence following the mean low-water line along the shore of the bay to a point defined by latitude $38^{\circ} 54' 42.0''$ and longitude $76^{\circ} 27' 25.2''$, situated on a point of land on the north side of Fishing Creek; thence in a straight line across the mouth of Fishing Creek to a point defined by latitude $38^{\circ} 54' 29.1''$ and longitude $76^{\circ} 27' 12.9''$, situated on Thomas Point; thence in a straight line across the mouth of South River to a point defined by latitude $38^{\circ} 53' 13.6''$ and longitude $76^{\circ} 29' 21.9''$, situated on Saunders Point; thence following the mean low-water line along the shore of the bay to a point defined by latitude $38^{\circ} 52' 10.4''$ and longi-

^aSee Charts of Natural Oyster Bars, published by the U. S. Coast and Geodetic Survey, and the progress map at the end of this publication.

^bLatitudes and longitudes based on the United States standard datum of the U. S. Coast and Geodetic Survey.

tude $76^{\circ} 30' 35.6''$, situated on Dutchman Point; thence in a straight line across the mouth of West River to a point defined by latitude $38^{\circ} 51' 12.8''$ and longitude $76^{\circ} 29' 53.8''$, situated on Curtis Point; thence following the mean low-water line along the shore of the bay to a point defined by latitude $38^{\circ} 48' 02.8''$ and longitude $76^{\circ} 30' 36.6''$, situated on a point about three-quarters of a mile north of Broadwater Creek; thence in a straight line across the mouth of Broadwater Creek to a point defined by latitude $38^{\circ} 47' 21.3''$ and longitude $76^{\circ} 31' 26.3''$, situated on a point at the southern entrance to Broadwater Creek; thence following the mean low-water line along the shore of the bay to a point defined by latitude $38^{\circ} 46' 22.2''$, and longitude $76^{\circ} 32' 23.5''$, situated on Parker Island; thence in a straight line across the mouth of Herring Bay to a point defined by latitude $38^{\circ} 43' 40.6''$ and longitude $76^{\circ} 31' 37.8''$, situated on Holland Point; thence following the mean low-water line along the shore of the bay to the southern boundary line of Anne Arundel County in the vicinity of Hog Point.

WATERS CONTIGUOUS TO THE COUNTY.

The oyster-culture laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the United States Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Annapolis;" and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law, and for the purpose of establishing the limits of the oyster-culture area to be opened up for the leasing with Anne Arundel County, a boundary line between the waters contiguous to, but not within the territorial limits of Anne Arundel County and the waters contiguous to, but not within the territorial limits of adjacent counties, has been established by the Shell Fish Commission. This boundary line^a has been delineated on the charts of the natural oyster bars published by the Coast and Geodetic Survey and is technically described and defined as follows:

Commencing at a point defined by the intersection of the center line of Brewerton Channel and a straight line between North Point (Old Tower) and a point defined by latitude $39^{\circ} 09' 59.3''$ and longitude $76^{\circ} 28' 39.7''$, situated on Rock Point; thence along the center line of Brewerton Channel and a continuation of the same line to a point defined by latitude $39^{\circ} 09' 10.6''$ and longitude $76^{\circ} 21' 00.0''$, situated about $3\frac{1}{8}$ miles^b east^c of Seven Foot Knoll Light and $3\frac{1}{16}$ miles southeast of Craighill Channel Light (Front Range); thence due south in a straight line to a point defined by latitude $39^{\circ} 03' 30.0''$ and longitude $76^{\circ} 21' 00.0''$, situated about $2\frac{5}{8}$ miles from Baltimore Light, nearly on a straight line between Baltimore Light and Love Point Light; thence in a straight line to a point defined by latitude $39^{\circ} 00' 57.2''$ and longitude $76^{\circ} 21' 34.0''$, situated about $1\frac{3}{8}$ miles east of Sandy Point Light; thence in a straight line to a point defined by latitude $38^{\circ} 53' 56.2''$ and longitude $76^{\circ} 24' 32.0''$, situated about $1\frac{1}{16}$ miles east of Thomas Point Light; thence in a straight line to a point defined by latitude $38^{\circ} 50' 01.1''$ and longitude $76^{\circ} 26' 15.0''$, situated about $2\frac{1}{2}$ miles west of Bloody Point Bar Light; thence in a straight line to a point defined by latitude $38^{\circ} 42' 33.4''$ and longitude $76^{\circ} 27' 40.0''$, situated about $3\frac{3}{8}$ miles east of Hog Point; thence in a straight line to a point defined by the intersection of the mean low-water line of the shore of the bay and the southern boundary line of Anne Arundel County, in the vicinity of Hog Point.

LIMITS OF DREDGING AREA ADJACENT TO CRAIGHILL CHANNEL.

The oyster laws of the State of Maryland define the limits of the area adjacent to Craighill Channel in which dredging for oysters is prohibited, and the boundaries of the natural oyster bars established by the Maryland Shell Fish Commission in that

^a See progress map at the end of this publication.

^b Statute miles.

^c True bearings.

vicinity have been delineated accordingly. The law defining the boundaries of the prohibited area is as follows:

[Code of Maryland, article 72, section 50.]

Any person dragging, raking, or dredging for oysters within five hundred yards of either edge of the channel at the mouth of the Patapsco River, known as the Craighill Channel, extending from Seven Foot Knoll to the mouth of Magothy River, or within five hundred yards of either edge of the cut-off connecting the Brewerton and Craighill channels, shall forfeit his boat or vessel; and it shall be lawful for any justice of the peace of the county or city in which such person shall be arrested to try such person, and on conviction to condemn said boat or vessel and sell the same on five days' notice, and fine the said offender a sum of not less than five dollars, nor more than twenty-five dollars, for each and every offense; and said justice of the peace shall pay over one-half of said fines and forfeitures to the informer, and the other half to the school board of said county or city.

LIST OF NATURAL OYSTER BARS WITHIN DREDGING AREA OF COUNTY.

The natural oyster bars open under the existing laws of Maryland for tonging or dredging, as the case may be, are not so classed and shown on the published charts, as it is a matter more or less subject to change by legislation independent of the oyster-culture laws of Maryland.

However, the Commission in establishing the legal boundaries of the oyster bars have so fixed the limits of certain bars that in every case their boundaries are within or coincident with the boundary line between the tonging and dredging areas. In establishing these boundaries, the Commission have adopted the tonging-dredging limits furnished to them through the courtesy of the Commander of the State Fishery Force.

Most of the natural oyster bars open for dredging are of large area but few in number, and a complete list of the dredging bars in "Anne Arundel County and Adjacent Waters," is given below to facilitate the search of anyone desiring to locate them on the published charts:

Chart No. 1:

Lumps East of Craighill Channel.
Bodkin Point North.
Bodkin Point South.
Mountain Point.

Chart No. 2:

Outer Magothy.

Chart No. 3:

(No dredging area on this chart.)

Chart No. 4:

Bay Shore.

BOUNDARIES OF NATURAL OYSTER BARS.

EXPLANATION OF DESCRIPTIONS OF BOUNDARIES.

The natural oyster bars of Anne Arundel County are 91 in number, and their total area as marked out by buoys placed by the hydrographic engineer of the commission is 33,666 acres. As provided by law, the limits of the oyster bars are all straight lines, but they inclose areas of all shapes from triangles to complicated nine-sided figures, and of all sizes from 4 acres in the rivers to 7,548 acres in the bay.

The sides vary in length from 93 to 7,529 yards, and in some cases the corners of the boundaries are practically at the triangulation stations from which they are located, while in other instances they are over 10,000 yards from the landmarks most available for the purposes of fixing their positions.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been executed, and the magnitude of the work with the consequent need of fixed and uniform methods, has made the problem of describing the boundaries, one of considerable difficulty and importance.

The boundaries of the natural oyster bars of Anne Arundel County, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey, and that they can be continued, with slight modifications to the end of the work.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in the county.

At the top of each tabular form is given the legal name of the natural oyster bar to be described, its general locality, and the number of the chart on which its legal boundaries are shown.

The first column under the heading of "Corner of bar" gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clock-wise direction around the bar; but where a corner of one bar is identical with the corner of one or more other bars, only the number of the corner of the oyster bar being described in the table is given in this column.

The second and third columns under the headings of "Latitude" and "Longitude" give the geographic positions of the corners. These positions have been adopted by the commission as the primary technical definition of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the Survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural causes or by the acts of vandals desiring to defeat the purposes of the oyster-culture law.

The fourth and fifth columns, under the general heading of "True bearings"^a and the specific headings "Forward" and "Back," give bearings measured from a true north and south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The

^a The mean magnetic declination in Anne Arundel County in 1907 was 5° 45' west of north and the annual increase 3'.

difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

The sixth column under the heading of "Distance" gives the three computed distances in yards from the corner of the bar noted in the first column to the triangulation stations named on the corresponding lines in the last column, and vice versa.

The seventh and last column, under the heading of "U. S. C. & G. S. Triangulation Station,"^a gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication, under the heading of "Descriptions of landmarks."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars. One, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants, and partly on his training and experience.

(1) *Triangulation*.—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in locating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the off-shore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

^aGeographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington.

In the case where there is only one engineer having a single sextant, the three-point method can be used, but not until the two angles determining the position of any buoy have been calculated from the "Forward bearing" given in the tabular forms describing the boundaries of the oyster bars. For example, take "Traces Hollow" bar, described on page —, and assume that "Corner No. 3" is to be examined as to its position. The angle between the two landmarks "Cool" and "Weems," as determined from the forward bearings from this corner, is $101^{\circ} 02'$ and the angle between "Weems" and "Field" is $68^{\circ} 52'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree, the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative positions that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edges of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true positions of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant then the other, until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor this problem is far easier of solution, as the two angles can be placed on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic locations of points are attained; in fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the Commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass, and will be of special use to the State Fishery Force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer takes compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,^a and if the results agree with the published bearings, the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks for which the bearings are published have been destroyed or washed away, any landmark whose position is indicated on the charts can be used by getting their bearings directly from the chart by parallel rulers or a protractor and then applying them in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination), given in the fourth column of the tables opposite the "corner" in question and on line with the name of the "station" being occupied. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Description of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner," from the landmark being occupied, is taken out. The angle calculated from the "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Description of landmarks" is then laid off on the transit and a range line established, on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

^aThe mean magnetic declination for Anne Arundel County (in 1907) is 5° and $45'$ west of north, and the annual increase is $3'$.

Survey of Oyster Bars, Anne Arundel County, Md.

LUMPS EAST OF CRAIGHILL CHANNEL.

(Chesapeake Bay east of Craighill and Cutoff dredged channels—Charts Nos. 1 and 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 03 58.04	76 23 18.98	N 67 29 W S 30 18 W S 3 20 E	S 67 31 E N 30 17 E N 3 20 W	3683 4132 6109	Peach Hill. Magothy. Sandy Point Light.
2	39 07 41.00	76 23 18.60	N 30 34 W N 76 32 W S 53 25 W	S 30 35 E S 76 34 E N 53 23 E	3855 3507 4957	Seven Foot Knoll Light. Bodkin Point (Old Tower). Locust.
3	39 10 02.00	76 24 13.95	N 18 31 E N 47 43 W S 26 25 W	S 18 31 W S 47 45 E N 26 24 E	2738 4875 4398	Craighill Channel Light. North Point (Old Tower). Bodkin Point (Old Tower).
4	39 09 06.91	76 21 47.76	N 33 40 W N 84 27 W S 70 16 W	S 33 42 E S 84 28 E N 70 14 E	5352 4366 6159	Craighill Channel Light. Seven Foot Knoll Light. Bodkin Point (Old Tower).
5	38 08 06.00	76 21 00.00	N 32 58 W N 66 08 W S 89 48 W	S 32 59 E S 66 10 E N 89 46 E	7758 6123 7056	Craighill Channel Light. Seven Foot Knoll Light. Bodkin Point (Old Tower).
6	39 05 42.40	76 21 00.00	N 55 39 W N 82 11 W S 73 22 W	S 55 42 E S 82 14 E N 73 20 E	8540 7695 7364	Bodkin Point (Old Tower). Locust. Peach Hill.
7	39 03 58.04	76 22 40.60	N 72 16 W S 40 56 W S 6 08 W	S 72 18 E N 40 55 E N 6 08 E	4631 4721 6136	Peach Hill. Magothy. Sandy Point Light.

BODKIN POINT NORTH.

(Chesapeake Bay off Bodkin Creek—Chart No. 1.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 08 09.93	76 24 48.59	N 9 45 E S 81 19 W S 22 20 W	S 9 45 W N 81 19 E N 22 20 E	2377 1060 4251	Seven Foot Knoll Light. Bodkin Point (Old Tower). Locust.
2	39 06 12.00	76 25 34.63	S 35 13 E N 35 20 E N 12 02 W	N 35 12 W S 35 21 W S 12 03 E	281 2786 7144	Bodkin Point (Old Tower). Seven Foot Knoll Light. North Point (Old Tower).
3	39 09 17.05	76 25 55.94	S 16 35 E N 87 54 E N 10 59 W	N 16 35 W S 87 54 W S 10 59 E	2528 2173 4884	Bodkin Point (Old Tower). Seven Foot Knoll Light. North Point (Old Tower).
4	39 09 34.25	76 25 38.55	S 5 03 E S 16 16 E N 18 13 W	N 5 02 W S 16 15 W S 18 13 E	3015 1786 4437	Bodkin Point (Old Tower). Seven Foot Knoll Light. North Point (Old Tower).
5	38 08 49.70	76 25 04.52	N 39 20 E N 21 44 W S 22 44 W	S 39 20 W S 21 45 E N 22 43 E	1296 6155 1627	Seven Foot Knoll Light. North Point (Old Tower). Bodkin Point (Old Tower).

BODKIN POINT SOUTH.

(Chesapeake Bay—South of Bodkin Point—Chart No. 1.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	39 06 58.17	76 24 04.20	N 9 06 W N 44 24 W S 61 29 W	S 9 06 E S 44 23 E N 61 28 E	4824 3164 3166	Seven Foot Knoll Light. Bodkin Point (Old Tower). Locust.
2	39 07 03.24	76 24 40.66	N 2 26 E N 31 00 W S 47 19 W	S 2 26 W S 31 01 E N 47 18 E	4596 2438 2481	Seven Foot Knoll Light. Bodkin Point (Old Tower). Locust.
3	39 07 34.80	76 25 12.85	N 16 25 E N 21 48 W S 19 36 W	S 16 26 W S 21 48 E N 19 36 E	3678 1103 2917	Seven Foot Knoll Light. Bodkin Point (Old Tower). Locust.
4	39 08 02.58	76 24 28.22	N 2 55 W N 86 49 W S 30 14 W	S 2 55 E S 86 50 E N 30 13 E	2594 1585 4273	Seven Foot Knoll Light. Bodkin Point (Old Tower). Locust.

MOUNTAIN POINT.

(Chesapeake Bay between Magothy River and Bodkin Point—Charts No. 1 and 2.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	39 03 30.57	76 25 38.60	N 6 32 E N 34 27 W S 42 34 W	S 6 32 W S 34 28 E N 42 34 E	2351 1382 1446	Peach Hill. Welch. Purse.
2	39 03 59.33	76 25 27.19	N 1 22 W N 81 04 W S 32 08 W	S 1 22 E S 81 04 E N 32 08 E	1367 1096 2403	Peach Hill. Welch. Purse.
3	39 04 28.57	76 24 55.63	N 66 13 W S 66 54 W S 34 55 W	S 66 13 E N 66 54 E N 34 54 E	943 2079 3683	Peach Hill. Welch. Purse.
4	39 06 01.40	76 25 25.60	N 1 02 W N 57 57 W S 1 33 W	S 1 02 E S 57 58 E N 1 33 E	4175 759 2751	Bodkin Point (Old Tower). Locust. Peach Hill.
5	39 06 00.00	76 24 04.22	N 27 39 W N 80 48 W S 39 18 W	S 27 40 E S 80 49 E N 39 18 E	4767 2817 3494	Bodkin Point (Old Tower). Locust. Peach Hill.
6	39 04 07.45	76 24 04.16	S 56 19 W S 88 12 W N 63 45 W	N 56 17 E N 88 11 E S 63 46 E	4160 3267 2470	Purse. Welch. Peach Hill.

Survey of Oyster Bars, Anne Arundel County, Md.

SILLERY BAY.

(Magothy River—Chart No. 1.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	39 05 23.54	76 26 37.39	S 87 05 W	N 87 04 E	1261	Hickory.
			S 21 21 W	N 21 21 E	478	Sillery.
			N 22 38 W	S 22 38 E	767	Bay.
2	39 05 26.75	76 27 06.72	S 70 36 W	N 70 36 E	519	Hickory.
			S 47 10 E	N 47 10 W	814	Sillery.
			N 38 22 E	S 38 22 W	767	Bay.
3	39 05 39.98	76 27 08.26	S 74 19 E	N 74 19 W	1397	Phil.
			N 73 27 E	S 73 27 W	538	Bay.
			S 36 01 W	N 36 01 E	766	Hickory.

PEACH HILL.

(Magothy River—Chart No. 2.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	39 04 48.75	76 27 07.25	N 40 00 E	S 40 00 W	949	Sillery.
			N 23 16 W	S 23 16 E	1206	Hickory.
			S 74 26 W	N 74 26 E	677	Dobbins.
2	39 05 02.48	76 27 03.85	N 63 00 E	S 63 00 W	585	Sillery.
			N 41 13 W	S 41 14 E	858	Hickory.
			S 49 05 W	N 49 05 E	984	Dobbins.
3	39 04 51.06	76 26 49.96	N 1 09 E	S 1 09 W	1803	Bay.
			N 41 59 W	S 42 00 E	1392	Hickory.
			S 76 50 W	N 76 50 E	1138	Dobbins.

WELCH.

(Magothy River—Chart No. 2.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	39 04 10.13	76 26 38.98	N 51 16 W	S 51 16 E	1791	Dobbins.
			S 56 29 W	N 56 28 E	1972	Revell.
			S 14 16 E	N 14 15 W	2475	Purse.
2	39 04 13.90	76 26 45.96	N 48 04 E	S 48 04 W	453	Bluff.
			N 50 41 W	S 50 42 E	1569	Dobbins.
			S 50 13 W	N 50 12 E	1901	Revell.
3	39 04 41.27	76 27 03.46	N 22 57 W	S 22 57 E	1479	Hickory.
			N 84 38 W	S 84 38 E	757	Dobbins.
			S 25 04 W	N 25 03 E	2361	Revell.
4	39 04 43.49	76 26 51.33	N 34 50 W	S 34 50 E	1567	Hickory.
			S 89 47 W	N 89 47 E	1073	Dobbins.
			S 30 47 W	N 30 47 E	2578	Revell.

Survey of Oyster Bars, Anne Arundel County, Md.

29

PARK.

(*Magothy River—Chart No. 2.*)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	39 04 24.25	76 28 47.64	N 27 06 E S 85 32 W S 9 01 W	S 27 06 W N 85 31 E N 9 01 E	825 2137 796	Iron. Ferry. Huddle.
2	39 04 39.77	76 29 05.54	S 67 25 W S 14 47 E S 46 37 E	N 67 24 E N 14 43 W N 46 36 W	1798 1355 3040	Ferry. Huddle. Revell.
3	39 04 43.82	76 28 59.65	S 65 31 W S 7 31 E S 42 44 E	N 65 30 E N 7 31 W N 42 43 W	1994 1459 3028	Ferry. Huddle. Revell.
4	39 04 27.92	76 28 39.59	N 15 02 E S 82 56 W S 20 17 W	S 15 02 W N 82 55 E N 20 17 E	632 2360 971	Iron. Ferry. Huddle.

UMPHASIS.

(*Magothy River—Chart No. 2.*)

	° / "	° / "	° / "	° / "	Yards.	
1	39 03 53.86	76 29 16.45	N 69 22 E N 44 30 W N 54 44 W	S 69 23 W S 44 30 E S 54 45 E	676 2223 3428	Huddle. Ham. Horn.
2	39 04 11.64	76 29 02.84	N 81 30 W S 37 14 E N 33 46 E	S 81 30 E N 37 14 W S 33 46 W	1750 454 1394	Ferry. Huddle. Iron.
3	39 04 10.87	76 28 45.31	N 82 36 W S 29 01 W S 56 25 E	S 82 37 E N 29 01 E N 56 25 W	2210 384 2014	Ferry Huddle. Revell.

BLACK.

(*Magothy River—Chart No. 2.*)

	° / "	° / "	° / "	° / "	Yards.	
1	39 03 47.41	76 28 17.54	N 66 27 E N 11 52 W N 63 34 W	S 66 28 W S 11 53 E S 63 34 E	2993 2020 1024	Bluff. Iron. Huddle.
2	39 03 48.38	76 28 29.45	N 69 10 E N 3 01 W N 54 58 W	S 69 11 W S 3 01 E S 54 58 E	3271 1947 737	Bluff. Iron. Huddle.
3	39 03 54.30	76 28 31.69	N 72 49 E N 1 26 W N 67 42 W	S 72 50 W S 1 26 E S 67 42 E	3262 1744 588	Bluff. Iron. Huddle.
4	39 03 59.98	76 28 13.76	N 73 44 E N 18 21 W N 88 13 W	S 73 45 W S 18 21 E S 88 13 E	2755 1636 1016	Bluff. Iron. Huddle.

Survey of Oyster Bars, Anne Arundel County, Md.

PERSIMMON.

(Magothy River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 03 16.00	76 26 46.33	S 54 28 E	N 54 28 W	986	Purse.
			N 31 28 E	S 31 28 W	1913	Welch.
			N 22 14 W	S 22 14 E	3183	Dobbins.
2	39 03 28.52	76 26 24.15	S 12 11 E	N 12 11 W	1018	Purse.
			N 18 57 E	S 18 57 W	1278	Welch.
			N 35 18 W	S 35 18 E	3093	Dobbins.
3	39 03 22.07	76 26 06.65	N 1 48 W	S 1 48 E	1427	Welch.
			N 39 20 W	S 39 21 E	3545	Dobbins.
			S 17 22 W	N 17 22 E	815	Purse.

OUTER MAGOTHY.

(Chesapeake Bay between Sandy Point and Magothy River—Chart No. 2.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 02 06.32	76 24 06.90	N 76 20 W	S 76 20 E	848	Magothy.
			S 13 38 E	N 13 38 W	1320	Corn.
			S 34 43 E	N 34 43 W	2837	Sandy Point Light.
2	39 03 14.62	76 26 08.00	S 21 17 W	N 21 16 E	565	Purse.
			S 48 19 E	N 48 18 W	3163	Magothy.
			N 0 19 W	S 0 19 E	1679	Welch.
3	39 03 23.58	76 25 53.64	S 35 06 W	N 35 06 E	1014	Purse.
			S 39 31 E	N 39 31 W	3118	Magothy.
			N 15 42 W	S 15 42 E	1433	Welch.
4	39 03 12.25	76 24 06.11	S 82 33 W	N 82 32 E	3439	Purse.
			S 22 39 W	N 22 39 E	2193	Magothy.
			S 19 18 E	N 19 17 W	4826	Sandy Point Light.
5	39 02 21.04	76 23 17.27	N 74 44 W	S 74 46 E	4867	Purse.
			S 82 05 W	N 82 05 E	2149	Magothy.
			S 6 15 E	N 6 15 W	2844	Sandy Point Light.

SANDY POINT NORTH.

(Chesapeake Bay—North of Sandy Point—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 01 00.00	76 23 26.00	S 80 01 E	N 80 01 W	547	Sandy Point Light. Corn. Bay Side.
			N 38 41 W	S 38 41 E	1222	
			S 39 01 W	N 39 01 E	752	
2	39 01 33.96	76 23 31.39	N 53 41 W	S 53 42 E	2182	Magothy. Corn. Sandy Point Light.
			S 72 53 W	N 72 53 E	652	
			S 28 47 E	N 28 47 W	1415	
3	39 02 06.32	76 24 06.90	N 76 20 W	S 76 20 E	848	Magothy. Corn. Sandy Point Light.
			S 13 38 E	N 13 38 W	1320	
			S 34 43 E	N 34 43 W	2837	
4	39 02 21.04	76 23 17.27	N 74 44 W	S 74 46 E	4867	Purse. Magothy. Sandy Point Light.
			S 82 05 W	N 82 05 E	2149	
			S 6 15 E	N 6 15 W	2844	
5	39 01 09.03	76 22 54.49	N 67 51 W	S 67 52 E	1721	Corn. Bay Side. Sandy Point Light.
			S 55 42 W	N 55 41 E	1577	
			S 35 56 W	N 35 56 E	493	

SANDY POINT SOUTH.

(Chesapeake Bay between Sandy Point and Severn River—Chart No. 2.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 59 25.24	76 24 12.60	N 29 39 E	S 29 40 W	3568	Sandy Point Light. Clump. Hackett.
			N 54 24 W	S 54 25 E	1135	
			S 76 41 W	N 76 40 E	1889	
2	38 59 31.59	76 24 22.86	N 35 11 E	S 35 12 W	3532	Sandy Point Light. Clump. Hackett.
			N 55 38 W	S 55 38 E	792	
			S 67 30 W	N 67 29 E	1697	
3	39 00 09.70	76 24 09.40	N 46 24 E	S 46 24 W	2322	Sandy Point Light. Bay Side. Clump.
			N 31 01 E	S 31 01 W	1298	
			S 50 14 W	N 50 14 E	1311	
4	39 00 40.02	76 23 19.79	N 33 01 E	S 33 01 W	690	Sandy Point Light. Bay Side. Clump.
			N 81 59 W	S 81 59 E	643	
			S 51 12 W	N 51 11 E	2969	
5	39 00 39.60	76 23 10.25	N 11 55 E	S 11 55 W	608	Sandy Point Light. Bay Side. Clump.
			N 83 20 W	S 83 20 E	893	
			S 54 15 W	N 54 14 E	3161	
6	39 00 09.44	76 23 25.80	N 18 21 E	S 18 22 W	1696	Sandy Point Light. Bay Side. Clump.
			N 23 07 W	S 23 07 E	1222	
			S 68 57 W	N 68 56 E	2310	
7	38 59 30.91	76 24 00.00	N 26 14 E	S 26 15 W	3244	Sandy Point Light. Clump. Hackett.
			N 69 29 W	S 69 29 E	1340	
			S 73 54 W	N 73 53 E	2258	

Survey of Oyster Bars, Anne Arundel County, Md.

HACKETT POINT.

(Annapolis Roads—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 57 49.56	76 25 51.90	N 15 32 E N 76 41 W S 35 05 W	S 15 32 W S 76 42 E N 35 04 E	2897 2281 3260	Hackett. Greenbury Point Light. Tolly.
2	38 58 13.82	76 26 05.14	N 29 40 E S 81 08 W S 23 38 W	S 29 41 W N 81 07 E N 23 37 E	2271 1894 3806	Hackett. Greenbury Point Light. Tolly.
3	38 58 49.60	76 25 50.84	N 44 17 E N 17 06 W S 56 19 W	S 44 17 W S 17 06 E N 56 18 E	1073 1960 2702	Hackett. Chase. Greenbury Point Light.
4	38 58 52.60	76 25 22.77	N 27 39 E N 0 46 E S 61 50 W	S 27 40 W S 0 46 W N 61 48 E	1989 665 3388	Clump. Hackett. Greenbury Point Light.
5	38 59 31.59	76 24 22.86	N 35 11 E N 55 38 W S 67 30 W	S 35 12 W S 55 38 E N 67 29 E	3532 792 1697	Sandy Point Light. Clump. Hackett.
6	38 59 25.24	76 24 12.60	N 29 39 E N 54 24 W S 76 41 W	S 29 40 W S 54 25 E N 76 40 E	3568 1135 1889	Sandy Point Light. Clump. Hackett.
7	38 59 02.50	76 24 18.26	N 28 29 W N 78 54 W S 67 35 W	S 28 29 E S 78 54 E N 67 33 E	1625 1721 5068	Clump. Hackett. Greenbury Point Light.
8	38 57 54.38	76 24 54.95	N 15 23 W N 84 25 W S 50 00 W	S 15 23 E S 84 26 E N 49 59 E	2726 3737 4404	Hackett. Greenbury Point Light. Tolly.

WHITEHALL CREEK.

(Whitehall Bay—Chart No. 2.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 59 30.41	76 25 55.80	N 41 54 W S 36 22 W S 60 41 E	S 41 55 E N 36 21 E N 60 41 W	667 3571 479	Chase. Greenbury Point Light. Spit.
2	38 59 36.98	76 26 27.62	S 22 27 W S 70 02 E N 54 54 E	N 22 27 E N 70 02 W S 54 54 W	3351 1335 479	Greenbury Point Light. Spit. Chase.
3	38 59 39.61	76 26 27.17	S 22 04 W S 66 20 E N 63 51 E	N 22 04 E N 66 20 W S 63 51 W	3437 1357 423	Greenbury Point Light. Spit. Chase.
4	38 59 39.62	76 26 06.79	N 40 04 W S 29 51 W S 52 22 E	S 40 04 E N 29 50 E N 52 21 W	243 3672 892	Chase. Greenbury Point Light. Spit.
5	38 59 48.92	76 25 53.42	S 75 56 W S 22 27 E S 85 27 E	N 75 55 E N 22 27 W N 85 26 W	524 930 1736	Chase. Spit. Clump.

SAND SPIT.

(Whitehall Bay—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 59 28.58	76 25 40.10	N 56 58 W S 1 24 E N 68 19 E	S 56 59 E N 1 24 W S 68 20 W	1025 173 1484	Chase. Spit. Clump.
2	38 59 32.55	76 25 43.61	S 17 29 E N 74 16 E N 61 01 W	N 17 29 W S 74 17 W S 61 02 E	322 1529 876	Spit. Clump. Chase.
3	38 59 36.64	76 25 31.06	N 75 21 W S 27 44 W N 76 23 E	S 75 22 E N 27 44 E S 76 23 W	1131 502 1175	Chase. Spit. Clump.

WHITEHALL.

(Annapolis Roads—Chart No. 2.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 57 34.40	76 26 50.62	N 23 37 W S 63 14 W S 8 38 W	S 23 38 E N 63 13 E N 8 38 E	1912 2154 2183	Greenbury. Gram. Tolly.
2	38 57 58.45	76 27 23.80	S 10 26 W N 41 27 E N 66 13 W	N 10 26 E S 41 27 W S 66 13 E	3018 302 1801	Tolly. Greenbury Point Light. Horn.
3	38 58 31.52	76 26 46.72	N 19 48 E S 78 35 W S 41 08 W	S 19 49 W N 78 35 E N 41 08 E	2645 886 1183	Chase. Greenbury. Greenbury Point Light.
4	38 58 57.50	76 26 47.47	S 23 12 W N 63 46 E N 29 38 E	N 23 12 E S 63 47 W S 29 38 W	1920 1982 1848	Greenbury Point Light. Spit. Chase.
5	38 59 20.75	76 26 27.40	S 26 45 W N 85 49 E N 25 08 E	N 26 45 E S 85 49 W S 25 08 W	2855 1252 911	Greenbury Point Light. Spit. Chase.
6	38 59 09.60	76 26 21.62	N 66 55 E N 11 02 E S 46 20 W	S 66 56 W S 11 02 W N 46 20 E	1192 1222 2114	Spit. Chase. Greenbury.
7	38 58 45.22	76 26 28.90	N 44 59 E N 11 53 E S 64 31 W	S 44 59 W S 11 53 W N 64 31 E	1823 2065 1482	Spit. Chase. Greenbury.
8	38 58 06.96	76 26 17.16	N 33 10 E S 87 45 W S 20 22 W	S 33 10 W N 87 45 E N 20 22 E	2633 1556 3473	Hackett. Greenbury Point Light. Tolly.

Survey of Oyster Bars, Anne Arundel County, Md.

WRECK BUOY.

(Annapolis Roads—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 57 45.00	76 26 08.80	N 1 28 W N 69 03 W S 29 36 W	S 1 28 E S 69 03 E N 29 36 E	4053 1901 2893	Chase. Greenbury Point Light. Tolly.
2	38 57.45.74	76 26 24.60	N 4 26 E N 64 17 W S 21 45 W	S 4 26 W S 64 17 E N 21 44 E	4039 1508 2735	Chase. Greenbury Point Light. Tolly.
3	38 57 56.16	76 26 26.80	N 5 45 E N 76 53 W S 18 17 W	S 5 45 W S 76 54 E N 18 16 E	3694 1336 3045	Chase. Greenbury Point Light. Tolly.
4	38 57 57.21	76 25 57.41	N 6 20 W N 82 38 W S 30 34 W	S 6 20 E S 82 39 E N 30 34 E	3662 2092 3400	Chase. Greenbury Point Light. Tolly.

TOLLY POINT.

(Annapolis Roads—Charts Nos. 2 and 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 55 51.02	76 25 58.66	N 24 18 W N 51 56 W S 4 31 W	S 24 17 E S 51 56 E N 4 31 E	4963 2154 3883	Greenbury Point Light. Tolly. Thomas Point Light.
2	38 56 45.52	76 27 13.00	S 27 13 E N 30 27 E N 40 08 W	N 27 12 W S 30 28 W S 40 09 E	573 5744 2884	Tolly. Hackett. Start.
3	38 57 28.74	76 27 32.60	N 60 54 W S 46 22 W S 21 35 E	S 60 54 E N 46 22 E N 21 35 W	1537 1130 2115	Start. Gram. Tolly.
4	38 57 42.02	76 27 10.60	N 10 44 W S 48 42 W S 4 42 E	S 10 45 E N 48 42 E N 4 42 W	794 1859 2422	Greenbury Point Light. Gram. Tolly.
5	38 57 13.35	76 26 51.19	N 20 40 W S 82 14 W S 12 11 W	S 20 40 E N 82 14 E N 12 11 E	1867 1926 1481	Greenbury Point Light. Gram. Tolly.
6	38 57 03.78	76 26 25.24	N 20 52 E N 33 02 W S 41 31 W	S 20 53 W S 33 02 E N 41 31 E	4640 2463 1503	Hackett. Greenbury Point Light. Tolly.
7	38 56 13.81	76 25 32.62	N 2 33 E N 36 00 W N 76 46 W	S 2 33 W S 36 01 E S 76 46 E	6027 4641 2447	Hackett. Greenbury Point Light. Tolly.

CHINKS POINT.

(Annapolis Roads—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 57 17.56	76 28 00.09	N 35 45 E	S 35 44 W	1977	Greenbury Point Light. Start. Gram.
			N 28 51 W	S 28 51 E	1284	
			S 13 07 W	N 13 07 E	413	
2	38 57 53.74	76 28 09.53	S 75 31 W	N 75 31 E	383	Start. Gram. Greenbury Point Light.
			S 5 27 E	N 5 27 W	1629	
			N 74 40 E	S 74 41 W	1456	
3	38 57 59.42	76 27 47.38	S 73 14 W	N 73 14 E	996	Start. Gram. Greenbury Point Light.
			S 13 17 W	N 13 17 E	1863	
			N 76 45 E	S 76 45 W	843	
4	38 57 42.02	76 27 10.60	N 10 44 W	S 10 45 E	794	Greenbury Point Light. Gram. Tolly.
			S 48 42 W	N 48 42 E	1859	
			S 4 42 E	N 4 42 W	2422	
5	38 57 28.74	76 27 32.60	N 60 54 W	S 60 54 E	1537	Start. Gram. Tolly.
			S 46 22 W	N 46 22 E	1130	
			S 21 35 E	N 21 35 W	2115	

INSIDE GREENBURY POINT.

(Lower Severn River—Chart No. 2.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 58 13.37	76 27 29.65	S 61 56 W	N 61 55 E	1610	Start. Greenbury Point Light. Greenbury.
			S 51 54 E	N 51 54 W	449	
			N 30 56 E	S 30 56 W	510	
2	38 58 14.06	76 27 36.89	S 57 35 W	N 57 35 E	1457	Start. Greenbury Point Light. Greenbury.
			S 61 06 E	N 61 06 W	622	
			N 47 34 E	S 47 34 W	612	
3	38 58 55.75	76 27 29.30	S 82 28 W	N 82 28 E	3156	State House Dome. Horn. Greenbury Point Light.
			S 51 15 W	N 51 15 E	1927	
			S 11 25 E	N 11 24 W	1741	
4	38 58 54.50	76 27 18.35	S 83 48 W	N 83 48 E	3438	State House Dome. Horn. Greenbury Point Light.
			S 56 59 W	N 56 58 E	2137	
			S 1 56 E	N 1 56 W	1666	

HORN POINT.

(Mouth of Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 57 59.58	76 28 13.62	N 82 55 E N 26 02 W S 41 57 W	S 82 55 W S 26 02 E N 41 56 E	1523 766 395	Greenbury Point Light. Horn. Start.
2	38 58 25.61	76 28 14.43	N 72 44 W S 58 57 W S 65 46 E	S 72 45 E N 58 57 E N 65 46 W	2028 367 1681	State House Dome. Horn. Greenbury Point Light.
3	38 58 34.38	76 28 46.21	S 67 25 E N 20 20 E N 74 27 W	N 67 26 W S 20 20 W S 74 28 E	2566 1339 1146	Greenbury Point Light. Bluff. State House Dome.
4	38 58 49.44	76 28 17.05	N 22 03 W S 83 54 W S 47 00 E	S 22 03 E N 83 53 E N 46 59 W	806 1883 2190	Bluff. State House Dome. Greenbury Point Light.
5	38 58 40.06	76 28 06.03	N 29 08 W N 86 56 W S 48 05 E	S 29 08 E S 86 57 E N 48 05 W	1217 2165 1763	Bluff. State House Dome. Greenbury Point Light.
6	38 58 07.42	76 27 49.50	S 85 00 E N 1 08 E S 58 11 W	N 85 00 W S 1 08 W N 58 11 E	879 1695 1056	Greenbury Point Light. Fort. Start.

OLD FORT.

(Lower Severn River—Chart No. 2.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 58 41.78	76 27 42.38	N 15 57 W S 57 38 W S 48 52 E	S 15 57 E N 57 37 E N 48 51 W	561 1375 793	Fort. Horn. Greenbury.
2	38 58 49.56	76 28 09.64	N 64 08 E N 33 48 W S 23 51 W	S 64 09 W S 33 48 E N 23 51 E	627 895 1090	Fort. Bluff. Horn.
3	38 58 56.77	76 27 57.56	S 79 22 W S 31 28 W S 44 08 E	N 79 22 E N 31 28 E N 44 08 W	2427 1453 1430	State House Dome. Horn. Greenbury.
4	38 58 49.85	76 27 37.41	S 85 48 W S 52 01 W S 30 26 E	N 85 47 E N 52 00 E N 30 26 W	2923 1636 921	State House Dome. Horn. Greenbury.

LITTLE SANDY.

(Lower Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 58 49.56	76 28 09.64	N 64 08 E S 33 48 W S 23 51 W	S 64 09 W S 33 48 E N 23 51 E	627 895 1090	Fort. Bluff. Horn.
2	38 58 59.72	76 28 16.91	N 37 24 W S 73 45 W S 40 58 E	S 37 24 E N 73 44 E N 40 57 W	504 1954 2438	Bluff. State House Dome. Greenbury Light.
3	38 58 56.77	76 27 57.56	S 79 22 W S 31 28 W S 44 08 E	N 79 22 E N 31 28 E N 44 08 W	2427 1453 1430	State House Dome. Horn. Greenbury.

CRECES COVE.

(Lower Severn River—Chart No. 2.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 59 13.44	76 28 38.63	N 39 18 W S 52 15 W S 76 47 E	S 39 19 E N 52 14 E N 76 47 W	1194 1636 272	Brice. State House Dome. Bluff.
2	38 59 23.31	76 28 39.65	N 50 59 W S 43 34 W S 9 17 E	S 51 00 E N 43 33 E N 9 17 W	938 1854 2164	Brice. State House Dome. Horn
3	38 59 23.65	76 28 33.55	S 85 24 W S 46 43 W S 5 01 E	N 85 24 E N 46 42 E N 5 01 W	1498 1975 2155	Hospital Cupola. State House Dome. Horn.
4	38 59 13.78	76 28 33.22	N 44 34 W S 54 46 W S 59 03 E	S 44 34 E N 54 46 E N 59 03 W	1281 1771 143	Brice. State House Dome. Bluff.

FERRY POINT.

(Lower Severn River—Chart No. 2.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 59 23.08	76 28 49.50	N 38 05 W S 84 37 W S 37 19 W	S 38 05 E N 84 37 E N 37 19 E	760 1078 1679	Brice. Hospital Cupola. State House Dome.
2	38 59 34.03	76 28 58.13	N 46 39 W S 60 57 W S 24 53 W	S 46 39 E N 60 56 E N 24 53 E	334 969 1879	Brice. Hospital Cupola. State House Dome.
3	38 59 36.13	76 28 54.03	N 65 41 W S 60 27 W S 26 51 W	S 65 41 E N 60 26 E N 26 51 E	385 1098 1989	Brice. Hospital Cupola. State House Dome.
4	38 59 24.91	76 28 45.70	N 46 43 W S 82 06 W S 38 40 W	S 46 43 E N 82 06 E N 38 40 E	783 1185 1789	Brice. Hospital Cupola. State House Dome.

Survey of Oyster Bars, Anne Arundel County, Md.

PEACH ORCHARD.

(Middle Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 59 36.22	76 29 17.07	N 58 41 E	S 58 41 W	300	Brice. Field. Hospital Cupola.
			N 59 42 W	S 59 42 E	644	
			S 32 37 W	N 32 36 E	646	
2	38 59 46.01	76 29 13.91	N 31 34 W	S 31 34 E	1318	Knob. Field. Brice.
			S 89 33 W	N 89 33 E	640	
			S 44 37 E	N 44 37 W	245	
3	39 00 06.98	76 29 25.53	N 42 43 W	S 42 43 E	566	Knob. Field. Brice.
			S 25 06 W	N 25 06 E	786	
			S 28 25 E	N 28 25 W	1005	
4	39 00 09.77	76 29 35.76	N 51 13 W	S 51 13 E	1219	Spring. Field. Brice.
			S 4 34 W	N 4 34 E	809	
			S 37 27 E	N 37 27 W	1229	
5	39 00 15.30	76 29 29.75	N 63 36 W	S 63 36 E	305	Knob. Field. Brice.
			S 12 38 W	N 12 38 E	1017	
			S 26 54 E	N 26 53 W	1304	
6	39 00 12.79	76 29 23.64	N 63 06 W	S 63 06 E	487	Knob. Field. Brice.
			S 22 53 W	N 22 53 E	985	
			S 21 41 E	N 21 41 W	1159	
7	38 59 58.56	76 29 12.85	N 45 43 W	S 45 43 E	1003	Knob. Field. Brice.
			S 57 19 W	N 57 18 E	793	
			S 13 35 E	N 13 35 W	615	
8	38 59 39.41	76 29 10.39	N 59 01 E	S 59 01 W	93	Brice. Field. Hospital Cupola.
			N 73 27 W	S 73 28 E	763	
			S 38 48 W	N 38 48 E	837	

WEEMS LOWER.

(Middle Severn River—Chart No. 2.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 59 38.30	76 29 26.54	N 80 24 E	S 80 25 W	512	Brice. Field. Hospital Cupola.
			N 50 18 W	S 50 18 E	399	
			S 9 09 W	N 9 09 E	623	
2	38 59 39.00	76 29 33.72	S 8 02 E	N 8 02 W	644	Hospital Cupola. Brice. Field.
			N 84 55 E	S 84 55 W	697	
			N 27 03 W	S 27 03 E	260	
3	38 59 45.23	76 29 32.87	N 81 24 W	S 81 24 E	142	Field. Hospital Cupola. Brice.
			S 4 34 E	N 4 34 W	851	
			S 77 32 E	N 77 32 W	688	
4	38 59 44.58	76 29 25.80	N 82 28 W	S 82 28 E	329	Field. Hospital Cupola. Brice.
			S 8 09 W	N 8 09 E	834	
			S 75 24 E	N 75 24 W	502	

Survey of Oyster Bars, Anne Arundel County, Md.

39

WEEMS UPPER.

(Middle Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 59 50.39	76 29 41.68	S 70 21 E N 2 24 E N 49 34 W	N 70 21 W S 2 24 W S 49 35 E	959 977 1543	Brice. Knob. Weems.
2	38 59 57.50	76 30 00.96	N 68 16 E N 36 41 E N 41 15 W	S 68 16 W S 36 41 W S 41 15 E	1518 918 1012	Brice. Knob. Weems.
3	38 59 59.38	76 29 37.93	S 52 08 E N 4 55 W N 61 17 W	N 52 08 W S 4 55 E S 61 18 E	1019 675 1451	Brice. Knob. Weems.

WADE.

(Middle Severn River—Chart No. 2.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 00 02.43	76 29 54.00	S 59 18 E N 32 39 E N 24 57 W	N 59 18 W S 32 39 W S 24 57 E	1427 677 1115	Brice. Knob. Spring.
2	39 00 15.01	76 30 28.50	S 61 39 E N 83 29 E N 36 41 E	N 61 38 W S 83 30 W S 36 41 W	2427 1282 732	Brice. Knob. Spring.
3	39 00 11.88	76 30 06.26	S 55 58 E N 69 57 E N 12 03 W	N 55 57 W S 69 57 W S 12 03 E	1871 732 709	Brice. Knob. Spring.

TRACES HOLLOW.

(Middle Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	39 00 12.22	76 29 44.45	N 76 30 W S 10 28 E S 42 41 E	S 76 31 E N 10 28 W N 42 40 W	1133 904 1440	Weems. Field. Brice.
2	39 00 20.81	76 29 53.66	N 52 01 W S 88 19 W S 19 02 E	S 52 02 E N 88 19 E N 19 03 W	1801 860 1247	Cool. Weems. Field.
3	39 00 30.13	76 30 17.58	N 44 52 W S 34 06 W S 34 46 E	S 44 52 E N 34 06 E N 34 45 W	1121 410 1271	Cool. Weems. Field.
4	39 00 40.05	76 30 24.06	N 53 27 W S 5 01 W S 33 26 E	S 53 27 E N 5 01 E N 33 26 W	772 677 2189	Cool. Weems. Field.
5	39 00 29.69	76 30 11.27	N 49 47 W S 50 38 W S 30 29 E	S 49 47 E N 50 38 E N 30 29 W	1253 512 1715	Cool. Weems. Field.
6	39 00 27.30	76 29 54.97	S 73 30 W N 17 31 E S 38 39 E	N 73 30 E N 17 31 W N 38 38 W	851 1465 2007	Weems. Field. Brice.
7	39 00 15.52	76 29 37.44	N 83 13 W S 1 10 W S 34 05 E	S 83 13 E N 1 10 E N 34 05 W	1295 1001 1413	Weems. Field. Brice.

SHARP POINT.

(Middle Severn River—Chart No. 2.)

	° / "	° / "	° / "	° / "	Yards.	
1	39 00 21.87	76 30 22.03	S 85 32 E N 36 54 E N 65 00 W	N 85 32 W S 36 54 W S 65 01 E	1106 445 1145	Knob. Spring. Luce.
2	39 00 28.40	76 30 54.04	N 83 05 E N 11 11 E N 36 35 W	S 83 05 W S 11 11 W S 36 35 E	1118 869 328	Spring. Cool. Luce.
3	39 00 40.02	76 30 51.60	N 62 07 W S 63 46 W S 44 40 E	S 62 07 E N 63 45 E N 44 40 W	1237 290 947	Salt. Luce. Weems.

SALTWORK.

(Upper Severn River—Chart No. 2.)

Corner of bar	Latitude.	Longitude	True bearing		Distance	U. S. C & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	39 00 38.76	76 30 58.06	N 56 04 W S 46 25 W S 52 57 E	S 56 05 E N 46 25 E N 52 58 W	1112 125 1047	Salt. Luce. Weems.
2	39 00 45.40	76 31 17.03	S 52 53 E N 10 59 E N 46 53 W	N 52 53 W S 10 59 W S 46 53 E	513 852 581	Luce. Chase. Salt.
3	39 00 48.27	76 31 15.62	S 42 28 E N 9 36 E N 56 56 W	N 42 28 W S 9 36 W S 56 56 E	551 750 550	Luce. Chase. Salt.
4	39 00 41.62	76 30 56.55	N 61 25 W S 35 28 W S 47 35 E	S 61 26 E N 35 28 E N 47 35 W	1096 223 1078	Salt. Luce. Weems.

ROCK POINT LOWER.

(Upper Severn River—Chart No. 2.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	39 00 48.77	76 30 47.67	N 40 10 W S 40 39 W S 59 39 E	S 40 10 E N 40 39 E N 59 39 W	946 558 1091	Chase. Luce. Spring.
2	39 00 53.50	76 30 55.06	N 36 25 W S 16 10 W S 57 58 E	S 36 25 E N 16 10 E N 57 58 W	700 607 1341	Chase. Luce. Spring.
3	39 01 07.97	76 30 56.36	N 78 48 W S 7 10 W S 26 05 E	S 78 48 E N 7 10 E N 26 05 W	389 1079 1799	Chase. Luce. Weems.

CHASE.

(Upper Severn River—Chart No. 2.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	39 01 06.64	76 31 16.52	S 60 06 E N 51 03 E N 62 12 W	N 60 06 W S 51 03 W S 62 12 E	877 191 681	Cool. Chase. Clem.
2	39 01 21.97	76 31 17.74	N 27 51 W S 70 47 W S 25 51 W	S 27 51 E N 70 47 E N 25 51 E	355 605 930	Point. Clem. Salt.
3	39 01 08.33	76 31 11.62	S 51 57 E N 17 30 E N 70 22 W	N 51 57 W S 17 30 W S 70 23 E	802 67 778	Cool. Chase. Clem.

Survey of Oyster Bars, Anne Arundel County, Md.

CLEM POINT.

(Upper Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 01 16.96	76 31 34.33	S 69 46 E N 29 11 E N 2 06 E	N 69 46 W S 29 12 W S 2 06 W	658 553 1312	Chase. Point. Bight.
2	39 01 28.05	76 31 53.55	S 61 49 E N 81 58 E N 30 35 E	N 61 49 W S 81 58 W S 30 35 W	1274 783 1088	Chase. Point. Bight.
3	39 01 25.75	76 31 36.87	S 52 33 E N 60 57 E N 6 28 E	N 52 33 W S 60 57 W S 6 28 W	862 385 1021	Chase. Point. Bight.

POINT.

(Upper Severn River—Chart No. 2.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 01 31.79	76 31 36.54	S 8 11 W S 87 07 E N 7 28 E	N 8 11 E N 87 07 W S 7 28 W	536 329 818	Clem. Point. Bight.
2	39 01 46.21	76 31 33.43	N 4 18 E S 78 43 W S 8 51 W	S 4 18 W N 78 42 E N 8 50 E	326 701 1029	Bight. Brewer. Clem.
3	39 01 44.38	76 31 27.74	N 17 57 W S 84 51 W S 17 52 W	S 17 57 E N 84 51 E N 17 52 E	406 841 1003	Bight. Brewer. Clem.

AISQUITH CREEK.

(Upper Severn River—Chart No. 2.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 01 48.26	76 31 34.61	N 12 15 E S 72 33 W S 6 41 W	S 12 15 W N 72 33 E N 6 41 E	261 688 1093	Bight. Brewer. Clem.
2	39 01 56.26	76 31 43.25	N 48 07 W S 42 02 W S 87 08 E	S 48 07 E N 42 02 E N 87 08 W	639 641 283	Arnold. Brewer. Bight.
3	39 01 59.26	76 31 38.16	N 60 49 W S 44 17 W S 52 14 E	S 60 49 E N 44 17 E N 52 14 W	769 807 188	Arnold. Brewer. Bight.

BREWER (SEVERN RIVER).

(Upper Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 01 52.03	76 32 38.08	N 85 43 E N 55 39 E N 68 35 W	S 85 44 W S 55 40 W S 68 36 E	1726 1097 877	Bight. Arnold. Bay.
2	39 01 59.72	76 32 26.03	S 49 35 E N 58 39 E N 47 53 W	N 49 34 W S 58 39 W S 47 54 E	914 687 2149	Brewer. Arnold. Long.
3	39 01 56.58	76 32 01.65	S 88 08 E N 6 31 W N 84 37 W	N 88 08 W S 6 31 E S 84 38 E	768 468 1783	Bight. Arnold. Bay.

POPPIN POINT.

(Upper Severn River—Chart No. 2.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 01 59.21	76 32 43.64	N 70 18 E N 37 47 W N 83 21 W	S 70 19 W S 37 48 E S 83 21 E	1117 1845 675	Arnold. Long. Bay.
2	39 02 10.37	76 33 21.98	S 48 34 E N 6 26 W N 55 52 W	N 48 34 W S 6 26 E S 55 52 E	451 1088 838	Bay. Long. Island.
3	39 02 17.67	76 33 07.79	N 78 09 W S 3 44 W S 81 42 E	S 78 10 E N 3 44 E N 81 41 W	1089 548 1704	Island. Bay. Arnold.
4	39 02 06.17	76 32 46.63	N 82 51 E N 40 41 W S 75 12 W	S 82 52 W S 40 42 E N 75 12 E	1138 1613 612	Arnold. Long. Bay.

Survey of Oyster Bars, Anne Arundel County, Md.

ARNOLD POINT.

(Upper Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	39 02 06.40	76 32 12.40	S 22 53 E	N 22 53 W	888	Brewer.
			N 59 45 E	S 59 45 W	266	Arnold.
			N 3 52 W	S 3 52 E	1757	Swan.
2	39 02 17.75	76 32 29.85	S 33 33 E	N 33 33 W	1440	Brewer.
			S 70 08 E	N 70 07 W	733	Arnold.
			N 13 57 E	S 13 57 W	1413	Swan.
3	39 02 47.48	76 32 22.95	S 38 06 W	N 38 05 E	1970	Bay.
			S 15 36 E	N 15 35 W	2288	Brewer.
			N 23 20 E	S 23 20 W	401	Swan.
4	39 02 42.43	76 32 16.43	N 1 19 W	S 1 19 E	539	Swan.
			S 45 09 W	N 45 08 E	1955	Bay.
			S 12 18 E	N 12 18 W	2081	Brewer.
5	39 02 22.39	76 32 19.14	N 2 47 E	S 2 47 W	1216	Swan.
			S 61 52 W	N 61 51 E	1492	Bay.
			S 20 46 E	N 20 46 W	1452	Brewer.

BIG ISLAND.

(Upper Severn River—Chart No. 2.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	39 02 28.99	76 34 00.56	S 55 36 E	N 55 36 W	1639	Bay.
			N 63 04 E	S 63 04 W	1002	Long.
			N 20 15 E	S 20 15 W	1613	Sharp.
2	39 02 33.62	76 34 04.88	S 53 34 E	N 53 34 W	1822	Bay.
			N 73 32 E	S 73 32 W	1050	Long.
			N 26 20 E	S 26 20 W	1515	Sharp.
3	39 02 38.13	76 33 56.80	S 45 27 E	N 45 26 W	1760	Bay.
			N 79 37 E	S 79 38 W	807	Long.
			N 20 52 E	S 20 52 W	1290	Sharp.

ROUND BAY.

(Upper Severn River—Chart No. 2.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	39 02 58.56	76 33 31.65	S 13 42 E	N 13 42 W	558	Long.
			N 44 38 E	S 44 38 W	1676	High.
			N 21 22 W	S 21 22 E	554	Sharp.
2	39 03 06.69	76 33 34.04	S 13 26 E	N 13 26 W	840	Long.
			N 53 28 E	S 53 28 W	1544	High.
			N 29 53 W	S 29 53 E	279	Sharp.
3	39 03 04.34	76 33 18.90	N 40 10 E	S 40 10 W	1307	High.
			N 59 07 W	S 59 07 E	626	Sharp.
			S 15 22 W	N 15 22 E	766	Long.

ROCK POINT UPPER.

(Upper Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance.	U. S. C. & G. S. triangulation station.
			Forward	Back		
			° / ' "	° / ' "		
1	39 03 17.91	76 33 01.49	S 60 44 E N 35 26 E N 56 01 W	N 60 43 W S 35 26 W S 56 02 E	1344 664 1746	Swan. High. Cedar.
2	39 03 36.56	76 32 59.58	N 76 58 W S 53 48 W S 75 16 E	S 76 58 E N 53 47 E N 75 16 W	1538 1296 347	Cedar. Sharp. High.
3	39 03 37.36	76 32 54.13	N 78 58 W S 56 20 W S 59 00 E	S 78 59 E N 56 19 E N 59 00 W	1672 1428 223	Cedar. Sharp. High.
4	39 03 20.36	76 32 48.52	S 48 20 E N 5 28 E N 63 28 W	N 48 20 W S 5 28 W S 63 29 E	1113 460 2005	Swan. High. Cedar.

UNDER THE GUMS.

(Chesapeake Bay between Annapolis Roads and Thomas Point—Chart No. 3.)

° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1 38 54 43.58	76 27 13.97	N 31 36 W S 88 06 W S 3 09 E	S 31 35 E N 88 05 E N 3 09 W	1262 1441 488	Cottage. Arundel. Thomas.
2 38 55 53.62	76 27 32.82	S 7 14 W S 10 25 E N 25 29 E	N 7 14 E N 10 25 W S 25 29 W	1298 2891 934	Cottage. Thomas. Bay Ridge Stack.
3 38 56 17.11	76 26 59.76	N 10 58 W N 83 43 W S 26 30 W	S 10 58 E S 83 43 E N 26 29 E	457 471 2324	Tolly. Bay Ridge Stack. Cottage.
4 38 56 09.06	76 26 48.87	N 66 51 W S 36 13 W S 12 48 E	S 66 51 E N 36 12 E N 12 48 W	821 2242 4594	Bay Ridge Stack. Cottage. Thomas Point Light.
5 38 55 25.41	76 26 56.64	N 17 03 W S 73 17 W S 22 07 E	S 17 04 E N 73 17 E N 22 07 W	1878 1169 3248	Bay Ridge Stack. Cottage. Thomas Point Light.
6 38 54 50.14	76 26 49.48	N 56 53 W S 41 12 W S 29 38 E	S 56 53 E N 41 12 E N 29 37 W	1563 937 2091	Cottage. Thomas. Thomas Point Light.

THOMAS POINT NORTH.

(North of Thomas Point Light—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 53 44.24	76 25 52.57	N 42 13 W	S 42 19 E	4167	Cottage.
			N 54 26 W	S 54 27 E	2604	Thomas.
			S 79 25 W	N 79 23 E	5612	Gowan.
2	38 53 55.73	76 26 23.01	N 87 08 E	S 87 08 W	337	Thomas Point Light.
			N 36 45 W	S 36 46 E	3357	Cottage.
			S 73 13 W	N 73 11 E	4924	Gowan.
3	38 54 09.43	76 26 21.37	N 63 57 W	S 63 57 E	1512	Thomas.
			S 68 26 W	N 68 24 E	5116	Gowan.
			S 33 23 E	N 33 23 W	533	Thomas Point Light.
4	38 54 41.78	76 26 54.87	N 45 41 W	S 45 41 E	1628	Cottage.
			S 47 34 W	N 47 34 E	644	Thomas.
			S 37 26 E	N 37 26 W	1932	Thomas Point Light.
5	38 54 50.14	76 26 49.48	N 56 53 W	S 56 53 E	1563	Cottage.
			S 41 12 W	N 41 12 E	937	Thomas.
			S 29 38 E	N 29 37 W	2091	Thomas Point Light.
6	38 55 00.30	76 26 22.75	N 75 45 W	S 75 46 E	2073	Cottage.
			S 51 32 W	N 51 31 E	1690	Thomas.
			S 8 40 E	N 8 40 W	2185	Thomas Point Light.
7	38 54 48.81	76 25 55.02	N 71 53 W	S 71 54 E	2887	Cottage.
			S 72 06 W	N 72 05 E	2159	Thomas.
			S 12 45 W	N 12 45 E	1819	Thomas Point Light.
8	38 54 23.04	76 26 02.85	N 55 09 W	S 55 09 E	3094	Cottage.
			N 83 39 W	S 83 39 E	1859	Thomas.
			S 12 10 W	N 12 10 E	925	Thomas Point Light.

THOMAS POINT SOUTH.

(Off entrance to South River—Chart No. 3.)

Cor- ner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 53 11.92	76 27 15.19	N 48 49 E N 1 18 E N 89 02 W	S 48 49 W S 1 18 W S 89 03 E	2275 2604 3340	Thomas Point Light, Thomas, Gowan.
2	38 54 15.00	76 27 24.91	S 72 09 E N 33 29 E N 81 10 W	N 72 09 W S 33 29 W S 81 12 E	2067 572 3606	Thomas Point Light, Thomas, Selby.
3	38 53 55.73	76 26 23.01	N 87 08 E N 36 45 W S 73 13 W	S 87 08 W S 36 46 E N 73 11 E	337 3357 4924	Thomas Point Light, Cottage, Gowan.
4	38 53 44.24	76 25 52.57	N 42 18 W N 54 26 W S 79 25 W	S 42 19 E S 54 27 E N 79 23 E	4167 2604 5612	Cottage, Thomas, Gowan.
5	38 53 17.66	76 26 06.79	N 4 02 W N 35 59 W S 88 30 W	S 4 02 E S 35 59 E N 88 28 E	1304 2975 5143	Thomas Point Light, Thomas, Gowan.
6	38 53 31.79	76 26 16.39	N 11 06 E N 37 37 W S 82 52 W	S 11 06 W S 37 38 E N 82 50 E	840 2442 4928	Thomas Point Light, Thomas, Gowan.
7	38 53 30.53	76 27 01.21	N 57 10 E N 8 54 W S 81 14 W	S 57 10 W S 8 54 E N 81 13 E	1599 2000 3745	Thomas Point Light, Thomas, Gowan.

OLD WOMAN.

(Chesapeake Bay—Entrance to South River—Chart No. 3.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 53 11.92	76 27 15.19	N 48 49 E N 1 18 E N 89 02 W	S 48 49 W S 1 18 W S 89 03 E	2275 2604 3340	Thomas Point Light, Thomas, Gowan.
2	38 53 20.61	76 28 06.36	N 68 35 E N 31 21 E S 83 14 W	S 68 36 W S 31 21 W N 83 13 E	3287 2706 2006	Thomas Point Light, Thomas, Gowan.
3	38 54 11.00	76 28 25.29	S 82 01 E N 22 41 E N 70 44 W	N 82 03 W S 22 41 W S 70 45 E	3594 1138 2089	Thomas Point Light, Arundel, Selby.
4	38 54 15.00	76 27 24.91	S 72 09 E N 33 29 E N 81 10 W	N 72 09 W S 33 29 W S 81 12 E	2067 572 3606	Thomas Point Light, Thomas, Selby.

Survey of Oyster Bars, Anne Arundel County, Md.

MARSHY POINT.

(Mouth of South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 53 20.61	76 28 06.36	N 68 35 E N 31 21 E S 83 14 W	S 68 36 W S 31 21 W N 83 13 E	3287 2706 2006	Thomas Point Light. Thomas. Gowan.
2	38 53 49.82	76 29 24.70	N 87 36 E N 48 38 E N 16 08 W	S 87 38 W S 48 39 W S 16 08 E	5129 2671 1461	Thomas Point Light. Arundel. Selby.
3	38 54 15.82	76 29 31.20	S 82 53 E N 67 48 E N 24 02 W	N 82 55 W S 67 49 W S 24 02 E	5337 2349 576	Thomas Point Light. Arundel. Selby.
4	38 54 29.17	76 28 38.13	N 87 20 W S 24 22 W N 60 36 E	S 87 20 E N 24 21 E S 60 37 W	1635 2797 892	Selby. Gowan. Arundel.
5	38 54 35.04	76 28 19.55	N 50 11 E S 86 43 W S 30 50 W	S 50 11 W N 86 42 E N 30 50 E	375 2126 3199	Arundel. Selby. Gowan.
6	38 54 11.00	76 28 25.29	S 82 01 E N 22 41 E N 70 44 W	N 82 03 W S 22 41 W S 70 45 E	3594 1138 2089	Thomas Point Light. Arundel. Selby.

TURKEY POINT.

(Lower South River—Chart No. 3.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 54 28.45	76 30 08.02	N 82 13 E N 4 19 E N 23 53 W	S 82 13 W S 4 20 W S 23 54 E	743 1974 3203	Selby. Hill. Switch.
2	38 54 33.04	76 30 11.84	S 86 17 E N 7 51 E N 23 29 W	N 86 17 W S 7 51 W S 23 29 E	838 1827 1438	Selby. Hill. Mayo.
3	38 54 40.91	76 29 49.08	N 89 05 E N 12 46 W N 48 04 W	S 89 04 W S 12 46 E S 48 04 E	2648 1584 1577	Arundel. Hill. Mayo.
4	38 54 41.46	76 29 25.41	N 60 03 W S 48 42 W N 89 20 E	S 60 04 E N 48 42 E S 89 21 W	2073 514 2023	Mayo. Selby. Arundel.
5	38 54 34.11	76 29 21.18	N 31 27 W S 79 44 W S 0 24 W	S 31 27 E N 79 44 E N 0 24 E	2080 507 2715	Hill. Selby. Gowan.
6	38 54 30.04	76 29 32.30	N 22 31 W N 77 10 W S 6 04 E	S 22 31 E S 77 10 E N 6 04 W	2069 211 2592	Hill. Selby. Gowan.
7	38 54 36.91	76 29 36.78	N 51 33 W S 25 24 W N 85 39 E	S 51 33 E N 25 24 E S 85 40 W	1912 205 2329	Mayo. Selby. Arundel.

RULER FLATS.

(Lower South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 54 29.17	76 28 38.13	N 87 20 W	S 87 20 E	1635	Selby.
			S 24 22 W	N 24 21 E	2797	Gowan.
			N 60 36 E	S 60 37 W	892	Arundel.
2	38 54 39.77	76 29 04.97	N 43 41 W	S 43 42 E	2189	Hill.
			S 73 06 W	N 73 06 E	968	Selby.
			S 8 44 W	N 8 44 E	2940	Gowan.
3	38 54 56.37	76 28 44.25	N 63 34 W	S 63 35 E	2299	Hill.
			S 60 15 W	N 60 15 E	1695	Selby.
			S 15 59 W	N 15 58 E	3605	Gowan.
4	38 54 35.04	76 28 19.55	N 50 11 E	S 50 11 W	375	Arundel.
			S 86 43 W	N 86 42 E	2126	Selby.
			S 30 50 W	N 30 50 E	3199	Gowan.

SWAN REEF.

(Lower South River—Chart No. 3.)

I	° / ' "	° / ' "	° / ' "		Yards.	
			° / ' "	° / ' "		
1	38 54 39.77	76 29 04.97	N 43 41 W	S 43 42 E	2189	Hill.
			S 73 06 W	N 73 06 E	968	Selby.
			S 8 44 W	N 8 44 E	2940	Gowan.
2	38 54 55.47	76 29 45.06	N 23 21 W	S 23 21 E	1148	Hill.
			N 66 15 W	S 66 15 E	1398	Mayo.
			S 9 08 E	N 9 08 W	821	Selby.
3	38 55 20.53	76 29 21.14	N 79 07 W	S 79 08 E	1106	Hill.
			S 16 48 W	N 16 48 E	1730	Selby.
			S 0 16 W	N 0 16 E	4281	Gowan.
4	38 55 17.03	76 29 06.64	N 77 27 W	S 77 28 E	1504	Hill.
			S 29 50 W	N 29 50 E	1773	Selby.
			S 5 31 W	N 5 31 E	4181	Gowan.
5	38 54 56.37	76 28 44.25	N 63 34 W	S 63 35 E	2299	Hill.
			S 60 15 W	N 60 15 E	1695	Selby.
			S 15 59 W	N 15 58 E	3605	Gowan.

Survey of Oyster Bars, Anne Arundel County, Md.

OUTER ROUND POINT.

(Lower South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 54 39.32	76 30 07.50	S 69 46 E N 4 51 E N 31 50 W	N 69 45 W S 4 51 W S 31 51 E	769 1604 1304	Selby. Hill. Mayo.
2	38 55 02.57	76 30 27.19	S 49 45 E N 38 46 E N 27 34 W	N 49 45 W S 38 46 W S 27 34 E	1625 1044 365	Selby. Hill. Mayo.
3	38 55 05.83	76 30 21.40	S 43 15 E N 35 30 E N 56 25 W	N 43 14 W S 35 30 W S 56 25 E	1588 866 386	Selby. Hill. Mayo.
4	38 54 50.26	76 29 53.36	S 84 21 E N 10 57 W N 55 09 W	N 84 20 W S 10 57 E S 55 10 E	2773 1252 1293	Arundel. Hill. Mayo.

INNER ROUND POINT.

(Lower South River—Chart No. 3.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 55 10.96	76 30 47.42	N 65 53 E N 9 51 W N 29 29 W	S 65 53 W S 9 51 E S 29 29 E	1300 1518 3759	Hill. Switch. Waggaman.
2	38 55 18.09	76 30 48.10	N 76 25 E N 10 54 W N 46 14 W	S 76 26 W S 10 54 E S 46 15 E	1239 1277 1813	Hill. Switch. Cedar.
3	38 55 15.56	76 30 27.68	N 30 11 W S 53 40 W S 40 02 E	S 30 11 E N 53 40 E N 40 02 W	1550 194 1944	Switch. Mayo. Selby.

HILL POINT EAST.

(Lower South River—Chart No. 3.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 55 20.97	76 29 52.13	N 54 17 W S 10 44 E S 64 22 E	S 54 18 E N 10 44 W N 64 21 W	332 1701 3025	Hill. Selby. Arundel.
2	38 55 25.06	76 29 54.63	S 67 02 W S 11 57 E S 62 37 E	N 67 02 E N 11 57 W N 62 38 W	1115 1848 3145	Mayo. Selby. Arundel.
3	38 55 30.57	76 29 29.42	S 81 28 W S 69 50 W S 8 02 W	N 81 28 E N 69 50 E N 8 02 E	878 1801 2014	Hill. Mayo. Selby.
4	38 55 25.50	76 29 28.36	N 87 22 W S 75 21 W S 9 38 W	S 87 23 E N 75 20 E N 9 38 E	897 1777 1849	Hill. Mayo. Selby.

HILL POINT.

(Lower South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 55 04.97	76 30 00.19	N 4 29 W N 74 36 W S 25 04 E	S 4 29 E S 74 36 E N 25 04 W	736 913 1249	Hill. Mayo. Selby.
2	38 55 22.80	76 30 18.57	S 30 20 E N 73 10 E N 42 56 W	N 30 19 W S 73 10 W S 42 56 E	2007 456 1497	Selby. Hill. Switch.
3	38 55 39.26	76 30 07.76	N 77 10 W S 36 41 W S 18 34 E	S 77 11 E N 36 41 E N 18 34 W	2432 1140 446	Cedar. Mayo. Hill.

ROCK POINT.

(Lower South River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 55 20.49	76 30 47.71	N 80 01 E N 12 06 W N 48 22 W	S 80 02 W S 12 07 E S 48 22 E	1213 1201 1765	Hill. Switch. Cedar.
2	38 55 28.28	76 30 56.01	S 87 52 E N 2 05 W N 50 24 W	N 87 52 W S 2 05 E S 50 24 E	1414 912 1427	Hill. Switch. Cedar.
3	38 55 29.48	76 30 40.51	S 17 21 E S 84 42 E N 26 52 W	N 17 21 W N 84 42 W S 26 52 E	612 1009 977	Mayo. Hill. Switch.

FOX POINT.

(Lower South River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 55 38.68	76 30 24.43	N 57 04 W S 15 13 W S 55 24 E	S 57 04 E N 15 13 E N 55 23 W	1031 926 708	Switch. Mayo. Hill.
2	38 55 42.79	76 30 42.66	N 42 22 W S 13 01 E S 62 57 E	S 42 22 E N 13 01 W N 62 57 W	571 1060 1192	Switch. Mayo. Hill.
3	38 55 48.04	76 30 40.60	N 60 51 W S 8 40 E S 54 21 E	S 60 52 E N 8 40 W N 54 21 W	503 1224 1239	Switch. Mayo. Hill.

Survey of Oyster Bars, Anne Arundel County, Md.

PURDY FLATS.

(Middle South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 55 32.97	76 30 58.82	S 43 26 E	N 43 26 W	967	Mayo.
			N 3 06 E	S 3 06 W	755	Switch.
			N 53 47 W	S 53 47 E	1273	Cedar.
2	38 55 40.32	76 31 31.70	S 78 59 E	N 78 58 W	2397	Hill.
			N 60 53 E	S 60 53 W	1038	Switch.
			N 16 40 W	S 16 41 E	2382	Waggaman.
3	38 55 47.20	76 31 09.44	S 38 38 E	N 38 37 W	1512	Mayo.
			N 49 34 E	S 49 34 W	421	Switch.
			N 69 59 W	S 69 59 E	795	Cedar.

THUNDER AND LIGHTNING.

(Middle South River—Chart No. 3.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 55 57.18	76 31 08.83	N 36 54 W	S 36 53 E	2142	Waggaman.
			S 85 11 W	N 85 10 E	766	Cedar.
			S 31 26 E	N 31 26 W	1779	Mayo.
2	38 56 30.58	76 31 20.96	S 86 39 W	N 86 39 E	1480	Almshouse.
			S 20 26 W	N 20 26 E	1271	Cedar.
			S 27 41 E	N 27 40 W	1344	Switch.
3	38 56 18.78	76 31 04.72	N 80 43 W	S 80 43 E	1930	Almshouse.
			S 47 42 W	N 47 42 E	1179	Cedar.
			S 13 55 E	N 13 55 W	816	Switch.
4	38 55 58.24	76 31 02.95	N 40 38 W	S 40 38 E	2212	Waggaman.
			S 83 46 W	N 83 46 E	923	Cedar.
			S 26 27 E	N 26 27 W	1736	Mayo.

BREWER.

(Middle South River—Chart No. 3.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 55 57.59	76 31 56.18	S 87 09 E	N 87 08 W	1554	Switch.
			N 1 18 W	S 1 18 E	1699	Waggaman.
			N 34 43 W	S 34 43 E	1288	Almshouse L. R.
2	38 55 59.02	76 32 01.60	S 85 46 E	N 85 45 W	1699	Switch.
			N 3 36 E	S 3 36 W	1655	Waggaman.
			N 30 20 W	S 30 20 E	1171	Almshouse L. R.
3	38 56 10.23	76 31 30.15	N 64 05 W	S 64 06 E	1374	Almshouse.
			S 21 46 W	N 21 46 E	544	Cedar.
			S 59 50 E	N 59 49 W	1002	Switch.
4	38 56 00.93	76 31 19.50	N 58 55 W	S 58 56 E	1769	Almshouse.
			S 68 24 W	N 68 24 E	518	Cedar.
			S 72 02 E	N 72 02 W	616	Switch.

ALMSHOUSE.

(Upper South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 56 07.31	76 32 02.38	S 66 35 E	N 66 35 W	3445	Hill.
			S 76 43 E	N 76 42 W	1762	Switch.
			N 5 11 E	S 5 11 W	1377	Waggaman.
2	38 56 15.42	76 32 03.30	S 44 40 E	N 44 40 W	956	Cedar.
			N 7 43 E	S 7 43 W	1108	Waggaman.
			N 35 07 W	S 35 07 E	1985	Ginger.
3	38 56 16.64	76 31 47.30	N 63 54 W	S 63 54 E	872	Almshouse.
			S 19 09 E	N 19 09 W	763	Cedar.
			S 61 22 E	N 61 21 W	1502	Switch.
4	38 56 09.78	76 31 44.88	N 54 01 W	S 54 01 E	1047	Almshouse.
			S 20 52 E	N 20 52 W	524	Cedar.
			S 68 44 E	N 68 43 W	1345	Switch.

DUVALL.

(Upper South River—Chart No. 3.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 56 21.44	76 31 42.87	N 23 30 W	S 23 30 E	975	Waggaman.
			N 76 11 W	S 76 11 E	930	Almshouse.
			S 8 36 E	N 8 36 W	892	Cedar.
2	38 56 40.84	76 31 47.23	N 48 44 W	S 48 44 E	365	Waggaman.
			S 61 10 W	N 61 10 E	897	Almshouse.
			S 9 11 E	N 9 11 W	1556	Cedar.
3	38 56 43.58	76 31 41.43	N 65 31 W	S 65 31 E	358	Waggaman Windmill.
			S 60 46 W	N 60 46 E	1075	Almshouse.
			S 3 22 E	N 3 22 W	1632	Cedar.
4	38 56 26.64	76 31 35.78	N 38 40 W	S 38 41 E	922	Waggaman.
			N 87 33 W	S 87 33 E	1088	Almshouse.
			S 2 53 W	N 2 53 E	1059	Cedar.
5	38 56 23.24	76 31 25.42	N 83 14 W	S 83 15 E	1369	Almshouse.
			S 19 04 W	N 19 04 E	998	Cedar.
			S 29 40 E	N 29 39 W	2758	Mayo.

ABERDEEN.

(Upper South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 56 37.57	76 31 59.68	N 54 41 W S 54 50 W S 22 03 E	S 54 41 E N 54 50 E N 22 03 W	1516 559 1539	Ginger. Almshouse. Cedar.
2	38 56 48.89	76 32 15.18	S 63 41 W S 3 59 W S 86 12 E	N 63 41 E N 3 59 E N 86 12 W	588 705 463	Brewer. Almshouse. Waggaman.
3	38 57 06.13	76 32 01.08	S 85 53 W S 46 46 W S 18 07 W	N 85 53 E N 46 45 E N 18 07 E	1203 1229 1363	Ginger. Brewer. Almshouse.

BEARD POINT.

(Upper South River—Chart No. 3.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 56 57.25	76 32 19.42	N 73 27 W S 37 14 W S 61 24 E	S 73 27 E N 37 14 E N 61 24 W	748 681 653	Ginger. Brewer. Waggaman.
2	38 57 01.39	76 32 33.99	N 77 34 W S 2 23 W S 64 42 E	S 77 35 E N 2 23 E N 64 42 W	341 682 1059	Ginger. Brewer. Waggaman.
3	38 57 05.07	76 32 32.31	S 82 23 W S 5 09 W S 57 44 E	N 82 22 E N 5 09 E N 57 44 W	382 809 1077	Ginger. Brewer. Waggaman.
4	38 57 03.80	76 32 22.19	S 89 19 W S 23 58 W S 50 28 E	N 89 18 E N 23 58 E N 50 28 W	644 836 838	Ginger. Brewer. Waggaman.

ROUGH POINT.

(Upper South River—Chart No. 3.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 56 47.29	76 33 10.30	N 89 18 E N 48 35 E N 0 14 E	S 89 18 W S 48 35 W S 0 14 W	1914 830 751	Waggaman. Ginger. Ximo.
2	38 56 52.59	76 33 12.34	S 85 29 E N 61 18 E N 5 41 E	N 85 29 W S 61 18 W S 5 41 W	1973 771 575	Waggaman. Ginger. Ximo.
3	38 56 54.98	76 32 49.81	S 39 49 E N 15 49 E N 47 29 W	N 39 49 W S 15 49 W S 47 29 E	606 302 727	Brewer. Ginger. Ximo.
4	38 56 48.32	76 32 49.14	S 56 57 E N 7 14 E N 37 43 W	N 56 57 W S 7 14 W S 37 44 E	442 518 906	Brewer. Ginger. Ximo.

SAUNDERS.

(Chesapeake Bay off entrance to South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 52 30.94	76 28 47.83	N 31 58 W S 76 16 W S 33 27 W	S 31 58 E N 76 15 E N 33 26 E	1696 2925 3156	Gowan. Dutchman. Curtis.
2	38 52 50.36	76 29 22.01	N 0 13 E S 55 12 W S 14 18 W	S 00 13 W N 55 11 E N 14 18 E	785 2362 3392	Gowan. Dutchman. Curtis.
3	38 53 12.32	76 29 02.90	N 71 59 E N 25 16 E N 85 09 W	S 72 01 W S 25 17 W S 85 09 E	4785 3350 593	Thomas Point Light. Arundel. Gowan.
4	38 53 49.82	76 29 24.70	N 87 36 E N 48 38 E N 16 08 W	S 87 38 W S 48 39 W S 16 08 E	5129 2671 1461	Thomas Point Light. Arundel. Selby.
5	38 53 20.61	76 28 06.36	N 68 35 E N 31 21 E S 83 14 W	S 68 36 W S 31 21 W N 83 13 E	3287 2706 2006	Thomas Point Light. Thomas. Gowan.

LULU.

(Chesapeake Bay, between South and West rivers—(Chart No. 3.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 51 15.58	76 26 30.52	S 62 03 E N 5 38 E S 64 56 W	N 62 01 W S 5 38 W N 64 54 E	5359 5444 5975	Bloody Point Light. Thomas Point Light. Horseshoe.
2	38 52 30.94	76 28 47.83	N 31 58 W S 76 16 W S 33 27 W	S 31 58 E N 76 15 E N 33 26 E	1696 2925 3156	Gowan. Dutchman. Curtis.
3	38 53 20.61	76 28 06.36	N 68 35 E N 31 21 E S 83 14 W	S 68 36 W S 31 21 W N 83 13 E	3287 2706 2006	Thomas Point Light. Thomas. Gowan.
4	38 53 11.92	76 27 15.19	N 48 49 E N 1 18 E N 89 02 W	S 48 49 W S 1 18 W S 89 03 E	2275 2604 3340	Thomas Point Light. Thomas. Gowan.
5	38 53 01.40	76 26 45.98	N 26 59 E N 13 31 W N 84 18 W	S 27 00 W S 13 31 E S 84 19 E	2075 3042 4131	Thomas Point Light. Thomas. Gowan.

DUTCHMAN.

(Chesapeake Bay off entrance to West River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 51 52.42	76 29 11.14	N 5 55 W N 74 48 W S 40 13 W	S 5 55 E S 74 49 E N 40 12 E	2753 2307 1743	Gowan. Dutchman. Curtis.
2	38 51 54.62	76 30 41.05	S 72 00 W S 41 30 E N 15 11 E	N 72 00 E N 41 30 W S 15 11 W	831 1880 550	Ches. Curtis. Dutchman.
3	38 52 50.36	76 29 22.01	N 0 13 E S 55 12 W S 14 18 W	S 0 13 W N 55 11 E N 14 18 E	785 2362 3392	Gowan. Dutchman. Curtis.
4	38 52 30.94	76 28 47.83	N 31 58 W S 76 16 W S 33 27 W	S 31 58 E N 76 15 E N 33 26 E	1696 2925 3156	Gowan. Dutchman. Curtis.

THREE SISTERS.

(Chesapeake Bay off West River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 49 35.36	76 29 11.96	N 28 33 E N 15 25 W S 38 04 W	S 28 35 W S 15 25 E N 38 04 E	10015 1276 1681	Thomas Point Light. Horseshoe. Franklin.
2	38 51 38.65	76 29 11.74	N 4 47 W N 64 11 W S 51 55 W	S 4 47 E S 64 11 E N 51 54 E	3213 2455 1410	Gowan. Dutchman. Curtis.
3	38 51 52.42	76 29 11.14	N 5 55 W N 74 48 W S 40 13 W	S 5 55 E S 74 49 E N 40 12 E	2753 2307 1743	Gowan. Dutchman. Curtis.
4	38 52 30.94	76 28 47.83	N 31 58 W S 76 16 W S 33 27 W	S 31 58 E N 76 15 E N 33 26 E	1696 2925 3156	Gowan. Dutchman. Curtis.
5	38 51 15.58	76 26 30.52	S 62 03 E N 5 38 E S 64 56 W	N 62 01 W S 5 38 W N 64 54 E	5359 5444 5075	Bloody Point Light. Thomas Point Light. Horseshoe.
6	38 49 42.70	76 27 33.13	N 14 20 E N 71 32 W S 66 41 W	S 14 21 W S 71 34 E N 66 40 E	8824 3106 3968	Thomas Point Light. Horseshoe. Franklin.

CURTIS.

(Chesapeake Bay off entrance to West River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 51 18.20	76 29 35.30	N 5 11 E N 42 06 W N 68 57 W	S 5 11 W S 42 06 E S 68 58 E	3907 2371 2261	Gowan. Dutchman. Ches.
2	38 51 23.17	76 30 07.54	N 17 54 E N 24 55 W N 64 22 W	S 17 54 W S 24 55 E S 64 22 E	3914 1755 1857	Gowan. Dutchman. Ches.
3	38 51 42.84	76 29 56.82	N 16 44 E N 47 45 W S 4 30 E	S 16 44 W S 47 45 E N 4 30 W	3195 1380 1014	Gowan. Dutchman. Curtis.
4	38 51 38.65	76 29 11.74	N 4 47 W N 64 11 W S 51 55 W	S 4 47 E S 64 11 E N 51 54 E	3213 2455 1410	Gowan. Dutchman. Curtis.

COLLINS FLATS.

(West River—Chart No. 3.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 51 11.28	76 30 30.98	N 86 52 E N 41 15 W S 83 33 W	S 86 53 W S 41 15 E N 83 32 E	982 1598 2701	Curtis. Ches. Shell.
2	38 51 11.73	76 30 39.78	N 88 11 E N 34 43 W S 82 36 W	S 88 11 W S 34 44 E N 82 35 E	1213 1447 2473	Curtis. Ches. Shell.
3	38 51 23.75	76 30 49.60	S 76 00 E N 35 47 W S 71 44 W	N 75 59 W S 35 48 E N 71 43 E	1517 965 2310	Curtis. Ches. Shell.
4	38 51 25.60	76 30 40.24	S 70 41 E N 4 39 E N 48 23 W	N 70 42 W S 4 39 W S 48 23 E	1298 1515 1086	Curtis. Dutchman. Ches.

POTATO HILL.

(West River—Chart No. 3.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 51 26.21	76 31 04.62	S 76 27 E N 13 34 W S 65 49 W	N 76 26 W S 13 35 E N 65 48 E	1921 722 1970	Curtis. Ches. Shell.
2	38 51 35.87	76 31 03.32	S 67 05 E N 28 28 W S 58 16 W	N 67 04 W S 28 28 E N 58 15 E	1990 427 2153	Curtis. Ches. Shell.
3	38 51 32.76	76 30 59.63	S 68 53 E N 32 04 W S 61 57 W	N 68 52 W S 32 04 E N 61 57 E	1861 566 2185	Curtis. Ches. Shell.

CEDAR POINT.

(West River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 51 08.18	76 31 39.88	S 77 03 W	N 77 03 E	890	Shell.
			S 30 47 W	N 30 46 E	260	Cove.
			N 86 46 E	S 86 47 W	2802	Curtis.
2	38 51 22.62	76 31 23.40	S 82 04 E	N 82 03 W	2385	Curtis.
			N 21 37 W	S 21 37 E	885	Ches.
			S 62 12 W	N 62 12 E	1472	Shell.
3	38 51 21.18	76 31 11.42	S 82 12 E	N 82 11 W	2066	Curtis.
			N 0 40 E	S 0 40 W	871	Ches.
			S 68 29 W	N 68 28 E	1739	Shell.
4	38 51 10.12	76 31 18.50	N 87 38 E	S 87 39 W	2235	Curtis.
			N 8 59 E	S 8 59 W	1259	Ches.
			S 79 31 W	N 79 31 E	1456	Shell.

BARREN NECK.

(West River—Chart No. 3.)

	° / "	° / "	° "	° / "	Yards.	
1	38 51 02.80	76 32 06.43	S 83 53 W	N 83 53 E	168	Shell.
			S 18 08 W	N 18 08 E	865	Counallor.
			S 85 43 E	N 85 43 W	569	Cove.
2	38 51 33.52	76 32 10.19	S 3 41 W	N 3 41 E	1056	Shell.
			S 31 42 E	N 31 41 W	1267	Cove.
			N 73 45 E	S 73 46 W	1624	Ches.
3	38 51 29.88	76 31 58.24	S 22 21 W	N 22 21 E	1007	Shell.
			S 20 09 E	N 20 09 W	1018	Cove.
			N 65 10 E	S 65 10 W	1371	Ches.
4	38 51 12.92	76 31 54.40	S 53 26 W	N 53 26 E	603	Shell.
			S 33 00 E	N 33 00 W	458	Cove.
			N 44 51 E	S 44 51 W	1621	Ches.

TUCKER.

(West River—Chart No 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 50 47.58	76 31 55.85	N 31 26 E N 42 00 W S 60 39 W	S 31 26 W S 42 00 E N 60 39 E	551 666 629	Cove. Shell. Counallor.
2	38 50 48.71	76 32 05.10	N 50 52 E N 23 47 W S 41 17 W	S 50 52 W S 23 47 E N 41 17 E	686 501 461	Cove. Shell. Counallor.
3	38 50 53.60	76 32 03.13	N 60 50 E N 40 59 W S 34 51 W	S 60 50 W S 40 59 E N 34 51 E	549 387 623	Cove. Shell. Counallor.
4	38 50 54.70	76 31 54.07	N 46 16 E N 62 37 W S 47 20 W	S 46 16 W S 62 37 E N 47 20 E	334 556 809	Cove. Shell. Counallor.

CHESTON POINT.

(Rhode River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 51 40.62	76 31 05.16	N 37 52 E N 35 47 W S 38 31 W	S 37 52 W N 35 47 E N 38 31 E	1271 265 1684	Dutchman. Ches. Cove.
2	38 52 18.00	76 31 06.88	N 21 31 E N 77 20 W S 5 59 W	S 21 31 W S 77 20 E N 5 59 E	645 60 1051	Delta. Rhode. Ches.
3	38 52 13.74	76 31 00.99	S 16 23 W S 74 48 E N 6 15 E	N 16 22 E N 74 47 W S 6 15 W	939 401 748	Ches. Cato. Delta.
4	38 51 46.58	76 30 57.55	N 35 50 E N 87 43 W S 39 27 W	S 35 50 W S 87 43 E N 39 26 E	990 355 1967	Dutchman. Ches. Cove.

DUTCHMAN HOLLOW.

(Rhode River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 52 17.54	76 30 48.48	N 22 25 W N 86 59 W S 13 46 E	S 22 26 E S 86 59 E N 13 46 W	666 544 241	Delta. Rhode. Cato.
2	38 52 21.98	76 30 54.43	N 11 06 W S 72 37 W S 29 12 E	S 11 06 E N 72 37 E N 29 12 W	475 405 439	Delta. Rhode. Cato.
3	38 52 28.12	76 30 50.55	N 47 39 W S 56 08 W S 40 42 E	S 47 40 E N 56 08 E N 10 42 W	1159 588 607	Turf. Rhode. Cato.

Survey of Oyster Bars, Anne Arundel County, Md.

BRICE FENCE.

(Rhode River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 52 19.38	76 31 11.05	S 57 00 E	N 57 00 W	61	Rhode.
			N 32 03 E	S 32 03 W	653	Delta.
			N 16 29 W	S 16 29 E	1122	Turf.
2	38 52 23.90	76 31 24.86	S 65 54 E	N 65 54 W	455	Rhode.
			N 60 33 E	S 60 33 W	816	Delta.
			N 2 51 E	S 2 51 W	924	Turf.
3	38 52 24.29	76 31 14.78	S 36 58 E	N 36 58 W	249	Rhode.
			N 48 50 E	S 48 50 W	589	Delta.
			N 13 35 W	S 13 35 E	936	Turf.

STONY HOLLOW.

(Rhode River—Chart No. 3.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 52 32.42	76 31 33.04	S 53 09 E	N 53 08 W	788	Rhode.
			S 79 36 W	N 79 36 E	528	Cupola.
			N 22 21 E	S 22 21 W	688	Turf.
2	38 52 42.50	76 31 31.75	S 36 18 E	N 36 18 W	1007	Rhode.
			S 52 03 W	N 52 03 E	702	Cupola.
			N 37 34 E	S 37 34 W	373	Turf.
3	38 52 52.04	76 31 19.40	S 13 27 E	N 13 27 W	1167	Rhode.
			N 35 29 W	S 35 29 E	1052	Calf.
			S 75 10 W	N 75 10 E	102	Turf.
4	38 52 48.00	76 31 17.48	S 12 29 E	N 12 28 W	1023	Rhode.
			N 53 26 W	S 53 26 E	185	Turf.
			N 47 04 E	S 47 04 W	407	Etna.

CHERRY.

(Rhode River—Chart No. 3.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 52 38.61	76 31 04.35	S 60 52 E	N 60 52 W	195	Delta.
			N 4 34 W	S 4 34 E	596	Etna.
			N 49 13 W	S 49 13 E	654	Turf.
2	38 52 43.34	76 31 04.58	N 5 26 W	S 5 26 E	437	Etna.
			N 61 19 W	S 61 19 E	557	Turf.
			S 34 42 E	N 34 42 W	309	Delta.
3	38 52 45.74	76 30 56.00	N 37 04 W	S 37 05 E	444	Etna.
			N 75 23 W	S 75 23 E	739	Turf.
			S 70 07 W	N 70 06 E	1591	Cupola.

JACKASS.

(Rhode River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 52 53.40	76 31 33.24	S 32 46 W S 74 56 E N 16 54 W	N 32 46 E N 74 56 W S 16 54 E	951 277 849	Cupola. Turf. Calf.
2	38 52 57.82	76 31 32.74	S 48 57 E S 85 39 E N 21 24 W	N 48 56 W N 85 39 W S 21 24 E	337 703 712	Turf. Etna. Calf.
3	38 53 02.82	76 31 23.90	N 44 55 W S 3 01 E S 64 38 E	S 44 55 E N 3 01 W N 64 37 W	698 390 518	Calf. Turf. Etna.
4	38 52 59.03	76 31 20.53	N 43 04 W S 14 37 W S 76 04 E	S 43 05 E N 14 37 E N 76 03 W	852 270 390	Calf. Turf. Etna.

BOLSTON BANK.

(Rhode River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 52 48.23	76 31 52.57	S 0 28 W N 82 29 E N 14 55 E	N 0 28 E S 82 29 W S 14 55 W	626 783 1021	Cupola. Turf. Calf.
2	38 52 56.81	76 31 49.73	S 4 59 W S 75 05 E N 15 05 E	N 4 59 E N 75 05 W S 15 05 W	919 726 722	Cupola. Turf. Calf.
3	38 52 54.68	76 31 43.02	S 16 57 W S 77 38 E N 0 49 E	N 16 57 E N 77 38 W S 0 49 W	881 537 769	Cupola. Turf. Calf.

HIGH ISLAND.

(Rhode River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 53 02.19	76 31 57.23	S 6 08 E S 67 44 E N 36 47 E	N 6 08 W N 67 43 W S 36 48 W	1102 971 644	Cupola. Turf. Calf.
2	38 53 10.24	76 31 53.18	S 0 28 E S 51 05 E N 58 48 E	N 0 28 W N 51 05 W S 58 48 W	1367 1018 371	Cupola. Turf. Calf.
3	38 53 07.64	76 31 49.00	S 4 26 W S 51 02 E N 26 57 E	N 4 26 E N 51 02 W S 26 57 W	1284 877 372	Cupola. Turf. Calf.

Survey of Oyster Bars, Anne Arundel County, Md.

FLAT ISLAND.

(Rhode River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 53 09.28	76 32 00.82	S 9 03 E	N 9 02 W	1352	Cupola.
			S 58 31 E	N 58 30 W	1162	Turf.
			N 60 04 E	S 60 04 W	554	Calf.
2	38 53 15.03	76 32 08.82	S 15 29 E	N 15 29 W	1587	Cupola.
			S 56 22 E	N 56 22 W	1447	Turf.
			N 83 11 E	S 83 11 W	696	Calf.
3	38 53 24.18	76 32 03.19	S 8 31 E	N 8 30 W	1858	Cupola.
			S 43 35 E	N 43 35 W	1532	Turf.
			S 67 24 E	N 67 24 W	588	Calf.

BUCE.

(Rhode River—Chart No. 3.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 53 27.22	76 31 54.57	S 1 25 E	N 1 25 W	1940	Cupola.
			S 34 22 E	N 34 22 W	1469	Turf.
			S 43 51 E	N 43 51 W	455	Calf.
2	38 53 30.38	76 32 05.82	S 9 33 E	N 9 33 W	2075	Cupola.
			S 40 29 E	N 40 28 W	1733	Turf.
			S 54 36 E	N 54 35 W	751	Calf.
3	38 53 35.18	76 32 03.90	S 7 34 E	N 7 34 W	2228	Cupola.
			S 35 59 E	N 35 59 W	1830	Turf.
			S 43 15 E	N 43 15 W	819	Calf.

Survey of Oyster Bars, Anne Arundel County, Md.

63

BAY SHORE.

(Chesapeake Bay between West River and Herring Bay—Chart No. 4.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 46 21.04	76 31 55.90	N 21 03 E N 86 52 W S 55 04 W	S 21 03 W S 86 52 E N 55 03 E	2175 728 3819	Broad. Parker. Fairhaven.
2	38 47 45.64	76 30 33.40	N 25 05 E N 8 22 W S 59 30 W	S 25 06 W S 8 22 E N 59 29 E	2624 584 1621	Franklin. Nut. Broad.
3	38 48 51.50	76 28 52.60	N 17 25 W N 84 16 W S 59 07 W	S 17 25 E S 84 16 E N 59 06 E	2840 1555 3199	Horseshoe. Franklin. Nut.
4	38 49 35.36	76 29 11.96	N 28 33 E N 15 25 W S 38 04 W	S 28 35 W S 15 25 E N 38 04 E	10015 1276 1681	Thomas Point Light. Horseshoe. Franklin.
5	38 49 42.70	76 27 33.13	N 14 20 E N 71 32 W S 66 41 W	S 14 21 W S 71 34 E N 66 40 E	8824 3106 3968	Thomas Point Light. Horseshoe. Franklin.
6	38 48 54.54	76 27 58.99	N 40 58 W N 88 59 W S 67 15 W	S 40 59 E S 89 00 E N 67 14 E	3452 2955 4510	Horseshoe. Franklin. Nut.
7	38 48 42.60	76 28 31.60	N 25 00 W N 77 45 W S 67 52 W	S 24 59 E S 77 46 E N 67 51 E	3321 2150 3562	Horseshoe. Franklin. Nut.
8	38 46 30.66	76 29 45.60	N 23 26 W N 57 18 W S 86 06 W	S 23 25 E S 57 19 E N 86 04 E	3386 3158 4178	Nut. Broad. Parker.
9	38 46 21.72	76 30 20.82	N 6 58 W N 40 43 W N 89 41 W	S 6 59 E S 40 44 E S 89 43 E	3434 2649 3238	Nut. Broad. Parker.

LONG.

(Chesapeake Bay off entrance to Herring Bay—Chart No. 4.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 44 23.03	76 32 15.40	S 34 48 E N 12 10 E N 55 33 W	N 34 48 W S 12 10 W S 55 34 E	1740 6148 3170	Holland. Broad. Fairhaven.
2	38 44 22.57	76 32 37.02	S 48 54 E N 5 04 E N 48 29 W	N 47 53 W S 5 04 W S 48 30 E	2108 4051 2729	Holland. Parker. Fairhaven.
3	38 46 21.04	76 31 55.90	N 21 03 E N 86 52 W S 55 04 W	S 21 03 W S 86 52 E N 55 03 E	2175 728 3819	Broad. Parker. Fairhaven.
4	38 46 21.72	76 30 20.82	N 6 58 W N 40 43 W N 89 41 W	S 6 59 E S 40 44 E S 89 43 E	3434 2649 3238	Nut. Broad. Parker.
5	38 45 17.50	76 31 28.94	N 0 58 E N 33 24 W S 89 21 W	S 0 58 W S 33 25 E N 89 20 E	4173 2615 3842	Broad. Parker. Fairhaven.
6	38 44 46.50	76 31 39.63	N 3 52 E N 19 43 W N 74 16 W	S 3 52 W S 19 44 E S 74 18 E	5231 3430 3696	Broad. Parker. Fairhaven.

FAIRHAVEN.

(Herring Bay off Fairhaven—Chart No. 4.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 44 33.63	76 32 47.46	S 45 51 E N 9 49 E N 50 55 W	N 45 50 W S 9 49 W S 50 56 E	2566 3716 2277	Holland. Parker. Fairhaven.
2	38 44 39.19	76 33 11.47	S 51 25 E N 20 03 E N 42 16 W	N 51 26 W S 20 03 W S 42 16 E	3165 3699 1686	Holland. Parker. Fairhaven.
3	38 45 04.65	76 32 56.40	N 18 23 E N 14 04 W N 75 44 W	S 18 24 W S 14 04 E S 75 45 E	2757 2321 1581	Parker. Hopkins. Fairhaven.
4	38 45 47.06	76 33 27.00	S 34 50 W S 34 05 E N 54 45 E	N 34 49 E N 34 04 W S 54 45 W	1267 5148 2054	Fairhaven. Holland. Parker.
5	38 45 27.79	76 32 27.80	N 3 34 E N 41 54 W S 80 19 W	S 3 34 W S 41 54 E N 80 17 E	1839 1975 2321	Parker. Hopkins. Fairhaven.

HOLLAND POINT.

(Chesapeake Bay, northeast of Holland Point—Chart No. 4.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 43 30.91	76 29 59.52	N 6 06 W N 33 20 W N 82 47 W	S 6 06 E S 33 21 E S 82 48 E	9221 6914 2617	Nut. Parker. Holland.
2	38 43 34.30	76 30 59.24	N 3 46 E N 21 26 W N 53 24 W	S 3 47 W S 21 27 E S 53 25 E	9074 6084 5762	Nut. Parker. Fairhaven.
3	38 44 04.64	76 32 28.49	S 58 52 W N 1 38 E N 43 15 W	N 58 52 E S 1 38 W S 43 16 E	1564 4641 3313	Holland. Parker. Fairhaven.
4	38 45 33.13	76 30 30.77	N 1 45 W N 60 54 W S 25 02 W	S 1 45 E S 60 55 E N 25 01 E	5049 3404 4179	Nut. Parker. Holland.
5	38 45 43.72	76 29 41.78	N 17 09 W N 73 04 W S 36 31 W	S 17 10 E S 73 06 E N 36 30 E	4908 4462 5151	Nut. Parker. Holland.
6	38 44 36.67	76 29 21.57	N 15 54 W N 53 26 W S 62 18 W	S 15 55 E S 53 28 E N 62 17 E	7228 5977 4064	Nut. Parker. Holland.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION OF DESCRIPTION OF LANDMARKS.

The oyster-culture laws of Maryland authorizing the survey of natural oyster bars provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said Board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view considerable effort has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the description of stations in a uniform and logical manner. The descriptions start with the assumption that the individual seeking the station has only an indefinite idea of its location. They then gradually proceed from general descriptions of the surroundings of a landmark to the specific details of the character of the center and reference markings. An examination of the descriptions themselves will best indicate the method followed.

The heading of each description is the name by which the landmark is known and designated in all work and records executed by the commission. Where the same name is used for two or more stations, as is the case in several instances in Anne Arundel County, the general locality of the station being described is given in parentheses alongside its name.

In the first paragraph, under the heading of "Locality," is given a description of the general locality of the landmark and the serial number of the published chart of the oyster bars of Anne Arundel County which best shows its location. The second paragraph, under this same heading, furnishes the description of the immediate locality of the landmark and refers to the bearing and distance of the cement monument marking the reference station, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached.

Under the heading of "Marks" a description is given of the markings of the "observed station" and the "reference station." It will be noted that although the "observed station" is the one "occupied" and "observed on" for horizontal angles, it is not marked as well as the reference station, and in many instances has only a pine stub to indicate its position. This is the case, for the reason that the necessity of inter-visibility of triangulation stations usually made it compulsory to locate these stations on edges of banks and ends of points of land, which in Chesapeake Bay and tributaries generally means that they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region showed the necessity of reference marks, if the reestablishment of a new framework of triangulation was to be avoided in the near future.

The marks designated in the descriptions as "the center point of triangle on standard cement monument" are all exactly alike. They are made out of cement, sand, and gravel and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. All of these monuments have been planted in the same manner, with their tops projecting 3 or 4 inches above the surface of the ground. As the above facts in reference to the "standard cement monuments" are a constant element in all the descriptions, their needless repetition is avoided by this one statement.

It is the expectation that the "reference stations," the character of which is explained above, will be used in the near future in the place of the original stations. This has been made possible by the careful measurements of direction and distance of these stations from the "observed station" which are recorded under the heading of "References." "

^aTo obtain the geographic positions of any of the "observed stations" or of the "reference stations," application should be made to the Superintendent of the Coast and Geodetic Survey at Washington.

Under the heading of "References" are given the directions and distances of all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography or location of boundaries of oyster bars, these references will be sufficient in many cases, to relocate the "observed station" or "reference station" when both of them have been destroyed but the reference objects remain.

The first reference object given in the descriptions is always a triangulation station visible from the station being described. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing^a of the initial object is always given, in parentheses alongside the name. This furnishes means for the calculation of the bearings of any of the reference objects for the purposes of locating a station by compass bearings, or the relocation of corner buoys of oyster-bar boundaries by the method of horizontal angles described under the heading of "Boundaries of natural oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape.

NORTH POINT (OLD TOWER).

Locality.—South of North Point about 150 yards offshore. (See Chart No. 1.)

Marks.—Observed station is center point of lantern on old stone tower formerly used as a light-house.

References.—

"Craighill Channel Light (Front Range)"..... S $81^{\circ} 20'$ E $2\frac{1}{2}$ miles.

CRAIGHILL CHANNEL LIGHT (FRONT RANGE).

Locality.—Offshore about $2\frac{1}{2}$ miles east by south of North Point and about 4 miles north-north-east of Bodkin Point. (See Chart No. 1.)

Marks.—Observed station is center point of black lantern on brown structure known as Craighill Channel Front Range Light-house.

References.—

"North Point (Old Tower)"..... N $81^{\circ} 19'$ W $2\frac{1}{2}$ miles.

ROCK POINT.

Locality.—South side of entrance to Rock Creek on Rock Point. (See Chart No. 1.)

Observed station is near the extreme end of point about 70 yards southeast from a small tower and 12 yards from the sea wall.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Seven Foot Knoll Light" (S $78^{\circ} 17'$ E).....	0	00	00	.....	$3\frac{3}{4}$ miles.
Bodkin Point (Old Tower).....	25	43	..	.....	$3\frac{3}{4}$ miles.
Tower on east corner.....	194	00	..	.....	70 yards.
Outer "White Rocks".....	211	07	..	.....	$\frac{3}{4}$ mile.
Water tower (opposite shore).....	291	27	..	.....	$2\frac{1}{2}$ miles.

^a The mean magnetic declination for Anne Arundel County (in 1907) is $5^{\circ} 45'$ west of north, and it is increasing at the rate of $3'$ yearly.

SEVEN FOOT KNOLL LIGHT.

Locality.—Offshore about $1\frac{1}{2}$ miles north-northeast of Bodkin Point and $3\frac{1}{4}$ miles southeast by south of North Point. (See Chart No. 1.)

Marks.—Observed station is center of lantern on brown screw pile structure known as Seven Foot Knoll Light-house.

References.—

"Bodkin Point (Old Tower)".....S 30 03 W $1\frac{1}{2}$ miles.

BODKIN POINT (OLD TOWER).

Locality.—South side of entrance to Bodkin Creek, on Bodkin Point, about 15 yards east of old stone house. (See Chart No. 1.)

Observed station is on top and at center of old tower formerly used as a light-house.

Marks.—Observed station is center point of a drill hole about 2 inches in diameter and 3 inches deep.

References.—

"Seven Foot Knoll Light"..... N 30 04 E $1\frac{1}{2}$ miles.

LOCUST.

Locality.—On shore of bay, midway between Bodkin Point Tower and the mouth of Magothy River. Counting down the bay from Bodkin Tower the station is located on the fifth bluff and near the center of it. (See Chart No. 1.)

Observed station is on the top of a bluff 20 feet high. It is 25 feet back from the edge of the bluff and just outside of a large orchard. Cement monument marking reference station is 6.77 meters west of observed station.

Marks.—Observed station is a nail in a wooden stub set flush with ground. Reference station is the center point of triangle on standard cement monument.

References.—

"Seven Foot Knoll Light" (N 17° 49' E).....	0	00	00	.....	4 miles.
Farm-house (through trees).....	165	56	..	.....	$\frac{1}{4}$ mile.
REFERENCE STATION.....	242	22	20	.....	6.77 meters.
Nail in blaze on tree.....	249	43	..	.....	6.59 meters.
Nail in blaze on tree (6 inches diameter).....	333	12	..	.....	15.57 meters.
Bodkin Point (Old Tower).....	350	43	..	.....	$2\frac{1}{4}$ miles.

BAY (MAGOTHY RIVER).

Locality.—Magothy River, on north shore of Sillery Bay, about $\frac{1}{2}$ mile west of Long Point and $1\frac{1}{2}$ miles northeast of Dobbins Island. (See Chart No. 1.)

Observed station is on edge of woods, about 2 feet above and 20 feet back from high-water mark. Cement monument marking reference station is 4.55 meters north of observed station.

Marks.—Observed station is a nail in a stub surrounded by a pine box projecting 6 inches above the ground. Reference station is the center point of triangle on standard cement monument.

References.—

"Dobbins" (S 29° 01' W).....	0	00	00	.....	$1\frac{1}{4}$ miles.
Right tangent Dobbins Island.....	9	15	..	.....	$1\frac{1}{2}$ miles.
Right tangent small island.....	19	11	..	.....	$1\frac{1}{4}$ miles.
Nail in blaze on tree (12 inches diameter).....	112	15	..	.....	6.98 meters.
REFERENCE STATION.....	149	19	10	.....	4.55 meters.
Nail in blaze on tree (12 inches diameter).....	232	53	..	.....	9.41 meters.
Right tangent Gibson Island.....	326	53	..	.....	$1\frac{1}{2}$ miles.

PHIL.

Locality.—North end of Gibson Island on point on south side of entrance to the cove making out from Sillery Bay. This cove nearly separates the island from the mainland. (See Chart No. 1.)

Observed station is on the northwestern side of a low sand spit at about high-water mark. Cement monument marking reference station is 0.95 meters northeast of observed station.

Marks.—Observed station is a broad pole signal with bottom of pole set in a wooden box projecting 6 inches above the ground. Reference station is the center point of a triangle on standard cement monument.

References.—

	°	'	"	
"Bay" (N 57° 20' W)	0	00	00	½ mile.
Small white shanty.....	23	18	..	¼ mile.
Brown dwelling	129	28	..	½ mile.
REFERENCE STATION	135	51	00	0.95 meter.
White dwelling (left end)	192	10	..	¾ mile.

HICKORY.

Locality.—Northwest shore of Sillery Bay on Hickory Bar Point, about ¾ mile north by east of Dobbins Island and ¾ mile west by south of entrance to cove separating Gibson Island from mainland. (See Chart No. 1.)

Observed station is 1 foot above and 30 feet back from high-water mark and a short distance from the extreme point. Cement monument marking reference station is 2.38 meters northwest of observed station.

Marks.—Observed station is a nail in a stub set in a box projecting 6 inches above the ground. Reference station is the center point of a triangle on standard cement monument.

References.—

	°	'	"	
"Dobbins" (S 7° 51' W).....	0	00	00	¾ mile.
Right tangent Dobbins Island.....	20	09	..	¾ mile.
REFERENCE STATION	131	24	00	2.38 meters.
Nail in blaze on old tree	135	38	..	7.36 meters.
Left tangent point at entrance to cove	254	29	..	1 mile.
Lone tree near "Purse," triangulation station,	332	33	..	3 miles.

SILLERY.

Locality.—West shore of Sillery on the northwest point of Gibson Island about 1 mile northeast of Dobbins Island. (See Chart No. 1.)

Observed station is on top of a bluff 6 feet high and 15 feet back from the edge. It is about 50 feet south of the break of the bluff where a low marsh commences. A small stump stands about 1 foot distant with blaze facing station. Cement monument marking reference station is 5.99 meters southeast of observed station.

Marks.—Observed station is a nail in a wooden stub set flush with the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hickory" (N 70° 41' W).....	0	00	00	½ mile.
Nail in blaze on hickory tree (6 inches diameter).....	129	10	..	9.39 meters.
Nail in blaze on locust tree (4 inches diameter)	174	45	..	10.12 meters.
REFERENCE STATION	197	49	50	5.99 meters.
Unpainted building (seen through trees).....	208	44	..	¼ mile.
Left tangent Dobbins Island	303	13	..	1 mile.
Chimney on house (opposite shore)	350	47	..	1 mile.

PEACH HILL.

Locality.—Summit of a prominent hill on Gibson Island about $\frac{1}{4}$ mile back from shore of bay and $1\frac{1}{4}$ miles north of entrance to Magothy River. (See Chart No. 1.)

Observed station is on the second hill south of the sand beach connecting Gibson Island with the mainland and $\frac{1}{4}$ mile south of a white dwelling house. Cement monument marking reference station is 10.75 meters southeast of observed station.

Marks.—Observed station is the intersection of two cross lines on the top of a granite monument projecting 4 inches above the ground. Reference station is the center point of a triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Welch" (S 41° 14' W).....	0	00	00	 $\frac{3}{4}$ mile.
Chimney of house (near Welch)	1	00	..	 $\frac{3}{4}$ mile.
Cupola of barn.....	96	51	..	 $\frac{1}{4}$ mile.
Right tangent of dwelling	134	21	..	 $\frac{1}{4}$ mile.
Nail in stump (5 inches diameter).....	177	21	..	 4.13 meters.
REFERENCE STATION	263	48	10	 10.75 meters.

WELCH.

Locality.—Southern end of Gibson Island on top of prominent hill about $\frac{1}{2}$ mile north by west of Mountain Point and $1\frac{1}{2}$ miles southeast of Dobbins Island. (See Chart No. 2.)

Observed station is in the side yard of house belonging to James Ellison and is 29.60 meters south of the northeast corner of house.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Revell" (S 69° 56' W).....	0	00	00	 $1\frac{1}{2}$ miles.
Nail in blaze on stump (15 inches diameter) ..	71	13	..	 23.60 meters.
Northeast corner of porch of house	116	12	..	 29.60 meters.
Nail in blaze on tree (6 inches diameter).....	170	31	..	 30.83 meters.
Left tangent of Sandy Point.....	256	00	..	 3 miles.

BLUFF (MAGOTHY RIVER).

Locality.—West side of Gibson Island and northwest shore of Magothy River, about 1 mile northwest of Mountain Point. It is near the center of the third prominent bluff from Mountain Point. (See Chart No. 2.)

Observed station is on the top of a bluff 20 feet high. It is in a thick woods about 15 feet from the edge of the bluff. Cement monument marking reference station is 5 meters northeast by east of observed station.

Marks.—Observed station is a nail in a wooden stub set flush with ground. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Revell" (S 49° 48' W).....	0	00	00	 $1\frac{1}{2}$ miles.
Left tangent Dobbins Island	55	06	..	 1 mile.
Chimney of white house on Dobbins Island ..	61	18	..	 1 mile.
Right tangent Dobbins Island.....	64	30	..	 1 mile.
Nail in blaze on tree (15 inches diameter).....	131	59	..	 7.94 meters.
REFERENCE STATION	189	43	20	 5 meters.
Nail in blaze on tree (12 inches diameter).....	216	58	..	 6.35 meters.
Lone tree (near "Purse" triangulation station) ..	302	50	..	 2 miles.

DOBBINS.

Locality.—North side of Magothy River on extreme east end of Dobbins Island. (See Chart No. 2.)

Observed station is on top of a bluff 25 feet high and about 30 feet back from the edge. Cement monument marking reference station is 3.37 meters west of station.

Marks.—Observed station is a nail in a stub projecting 3 inches above-ground. Reference station is center point of a triangle on standard cement monument.

References.—

	°	'	"	
"Bay" (N 29° 01' E).....	0	00	00	1½ miles.
Yellow house.....	46	31		1 mile.
Sandy Point Light.....	108	22		6 miles.
Lone tree near "Purse" triangulation station .	123	00		2¼ miles.
Chimney of house on island.....	201	51		150 yards.
REFERENCE STATION.....	220	24	50	3.37 meters.
Tangent to Hickory Bar Point.....	338	52		¾ mile.

IRON.

Locality.—North shore Magothy River on extreme southeast end of Park Point and between entrances to Park and Broad creeks. (See Chart No. 2.)

Observed station is on the top of a bluff about 15 feet high and is 15 feet back from the edge. Cement monument marking reference station is 5.01 meters northwest by west of station.

Marks.—Observed station is a nail in a wooden stub projecting 3 inches above the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Huddle" (S 18° 13' W).....	0	00	00	1 mile.
Nail in blaze on tree (12 inches diameter)....	95	47		8.96 meters.
REFERENCE STATION.....	122	18	20	5.01 meters.
Nail in blaze on tree.....	128	19		10.46 meters.
Nail in blaze on forked tree.....	190	57		4.37 meters.
House on Dobbins Island.....	258	11		¾ mile.
Lone tree near "Purse" triangulation station .	298	13		3 miles.

HAM.

Locality.—North shore of upper end of Magothy River opposite Ferry Point on first point west of mouth of Blackhole Creek. (See Chart No. 2.)

Observed station is on a low flat sandy point making out from a bluff 15 feet high. It is 3 feet above and 10 feet back from high-water mark. Cement monument marking reference station is 7.34 meters north of observed station.

Marks.—Observed station is a nail in a wooden stub projecting 3 inches above the ground. Reference station is the center point of triangle on standard cement monument.

References.—

	°	'	"	
"Ferry" (S 14° 17' E).....	0	00	00	½ mile.
REFERENCE STATION.....	201	20	00	7.34 meters.
Nail in blaze on tree (12 inches diameter)....	260	55		7.54 meters.
House on Dobbins Island.....	283	58		2¼ miles.
Old Station.....	317	03		6.04 meters.

BANK.

Locality.—North shore of upper end of Magothy River about ¾ mile northwest from mouth of Blackhole Creek and nearly abreast of Cypress Creek. (See Chart No. 2.)

Observed station is at the base of a bluff about 20 feet high. It is 2 feet above and 2 feet back from high-water mark. Several large brown boulders are scattered in front of the station. Cement monument marking reference station is 11.86 meters northeast by north of the observed station on the top of bluff. It can not be seen from the observed station.

Survey of Oyster Bars, Anne Arundel County, Md.

Marks.—Observed station is a pole signal with the lower end of the pole sunk in a box projecting 1 foot above the ground. Reference station is the center point of a triangle on standard cement monument.

References.—

	°	'	
"Horn"	S 65	33 W	1½ mile.
REFERENCE STATION.....	S by W		11.86 meters.

HORN (MAGOTHY RIVER).

Locality.—South shore of upper end of Magothy River about ½ mile southeast from mouth of Cattail Creek and ½ mile north of Cypress Creek. (See Chart No. 2.)

Observed station is on a point about 2 feet above and 10 feet back from high-water mark. Slope of bank begins at station and rises to an elevation of 20 feet and is covered with woods. A pile of stone surrounds station. Cement monument marking reference station is 4.51 meters south by east of station.

Marks.—Observed station is a nail in a wooden stub 3 inches below the surface of the ground. Reference station is the center point of triangle on standard cement monument.

References.—

	°	'	"	
"Huddle" (S 63° 06' E)	0	00	00	2¼ miles.
White house near mouth of Dividing Creek ...	38	08		¾ mile.
REFERENCE STATION.....	42	02	40	4.51 meters.
Nail in blaze on tree (4 inches diameter).....	49	13		7.82 meters.
Nail in blaze on forked tree	78	22		5.21 meters.
Chimney of white house across river.....	254	59		½ mile.

TAIL.

Locality.—South shore of upper end of Magothy River on Stony Point at eastern side of entrance to Dividing Creek. (See Chart No. 2.)

Observed station is on the upper edge of a bluff 15 feet high. Cement monument marking reference station is 6.94 meters south-southeast of station.

Marks.—Observed station is a pole signal with base stuck in a vertical box. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Horn" (N 24° 24' W)	0	00	00	¾ mile.
White house	17	24		1¼ miles.
Nail in blaze on tree (8 inches diameter).....	129	18		11.22 meters.
REFERENCE STATION.....	171	13	00	6.94 meters.
Nail in blaze on tree (6 inches diameter).....	192	47		3.14 meters.
Small hill on point on mouth of Dividing Creek	242	50		¼ mile.
Chimney on house on west shore of Dividing Creek	267	08		¾ mile.

FERRY.

Locality.—South shore of Magothy River on Ferry Point about ½ mile east of mouth of Dividing Creek. (See Chart No. 2.)

Observed station is 15 feet from and 3 feet above high-water mark. There are five cedar trees in close proximity to the station. Cement monument marking reference station is 5.08 meters southwest by south from observed station.

Marks.—Observed station is a nail in cement in a tile pipe buried 1 foot below the surface. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Huddle" (S 72° 50' E)	0	00	00	1¼ miles.
Nail in blaze on forked tree (4 inches diameter) 28	34			9.74 meters.
Nail in blaze on tree (6 inches diameter).....	57	46		22.70 meters.

	°	'	"	
REFERENCE STATION	97	05	10	5.08 meters.
Top of white house	114	22		$\frac{1}{2}$ mile.
Nail in blaze on tree (8 inches diameter)				6.43 meters.
House on Dobbins Island	332	30		$2\frac{1}{4}$ miles.
House on hill back of Mountain Point	347	04		$3\frac{1}{2}$ miles.

HUDDLE.

Locality.—South shore of Magothy River on Huddles Point about $\frac{3}{4}$ mile northeast of inner entrance to Forked Creek. (See Chart No. 2.)

Observed station is about 10 feet from the edge of a sandy bank 8 feet high. Cement monument marking reference station is 4.99 meters south-southwest from observed station.

Marks.—Observed station is a nail set in cement in a tile pipe projecting 1 inch above the sand. Reference station is center point of triangle on standard cement monument.

	°	'	"	
<i>References.</i> —				
"Iron" (N 19° 13' E)	0	00	00	1 mile.
House on Dobbins Island	37	52		$1\frac{1}{4}$ miles.
House on hill back of Mountain Point	69	48		$2\frac{1}{2}$ miles.
Nail in blaze on tree (3 inches diameter)	176	38		15.86 meters.
REFERENCE STATION	186	32	50	4.99 meters.
Nail in blaze on tree (14 inches diameter)	255	33		5.86 meters.

REVELL.

Locality.—South shore of Magothy River, about $1\frac{1}{4}$ miles west-northwest of Persimmon Point and $1\frac{1}{4}$ miles south of east end of Dobbins Island. (See Chart No. 2.)

Observed station is on a bluff 6 feet high and 22 feet from the edge. It is in a large cleared space about 100 yards west of woods. Cement monument marking reference station is 5.54 meters south southwest of observed station.

Marks.—Observed station is a nail in a wooden stub projecting 4 inches above the ground. Reference station is the center point of triangle on standard cement monument.

	°	'	"	
<i>References.</i> —				
"Huddle" (N 67° 20' W)	0	00	00	$1\frac{1}{4}$ miles.
House on Dobbins Island	71	18		$1\frac{1}{4}$ miles.
House on hill back of Mountain Point	136	35		$1\frac{1}{2}$ miles.
Right tangent Mountain Point	161	18		$1\frac{1}{2}$ miles.
REFERENCE STATION	261	20	00	5.54 meters.

PURSE.

Locality.—South of entrance to Magothy River on a prominent hill about $\frac{1}{4}$ mile south south-east of Persimmon Point. (See Chart No. 2.)

Observed station is on the nearer of two summits, the other one being occupied by a lone cedar tree. The observed station is almost on line between this cedar tree and Mountain Point. Cement monument marking reference station is 8.93 meters south of observed station.

Marks.—Observed station is a nail in a wooden stub projecting 4 inches above the ground. Reference station is the center point of triangle on standard cement monument.

	°	'	"	
<i>References.</i> —				
"Bluff" (N 9° 10' W)	0	00	00	$1\frac{3}{4}$ miles.
Tangent to shore toward Sandy Point	31	26		$\frac{3}{4}$ mile.
Right tangent to Gibson Island	34	36		2 miles
Left chimney of farmhouse with red roof	133	52		$\frac{1}{2}$ mile.
REFERENCE STATION	185	05	50	8.93 meter
Lone cedar tree		SSW		185 paces
Left of two prominent trees	288	27		$\frac{1}{4}$ mile
Right of two prominent trees	295	07		$\frac{1}{4}$ mile.

MAGOTHY.

Locality.—West shore of bay, about halfway between Persimmon Point and Sandy Point. It is about 2 miles northwest of Sandy Point Light and about 2 miles south-southeast of Mountain Point. (See Chart No. 2.)

Observed station is about 20 feet back from the edge of a bluff 20 feet high. It is just outside an orchard about midway between a group of farm buildings and a grove of trees to the westward. Cement monument marking reference station is 11.63 meters west of observed station.

Marks.—Observed station is a nail in a wooden stub projecting 3 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Welch" (N 32° 08' W).....	0	00	00	2½ miles.
Right tangent Gibson Island.....	21	02	..	3 miles.
West peak of farmhouse.....	184	49	..	¼ mile.
Nail in blaze on tree.....	158	52	..	62.3 meters.
REFERENCE STATION.....	287	44	10	11.63 meters.
Nail in blaze on tree.....	336	14	..	32.92 meters.

CORN.

Locality.—West shore of bay, about 1 mile northwest of Sandy Point Light. (See Chart No. 2.)

Observed station is in a cultivated field about 18 feet back from edge of a bluff 15 feet high. Cement monument marking reference station is 9.42 meters west of observed station.

Marks.—Observed station is a nail in a stub set flush with ground. Reference station is center point of triangle of standard cement monument.

References.—

	°	'	"	
"Peach Hill" (N 20° 48' W).....	0	00	00	4 miles.
Baltimore Light.....	19	47	..	2¼ miles.
Extreme north tangent of Kent Island.....	98	47	..	5 miles.
Sandy Point Light.....	149	34	..	1 mile.
Lone oak tree (2 inches diameter).....	229	14	..	¼ mile.
East peak of red roof of barn or house.....	243	08	..	¾ mile.
REFERENCE STATION.....	258	51	30	9.425 meters.

SANDY POINT LIGHT.

Locality.—East of Sandy Point about ½ mile offshore. (See Chart No. 2.)

Marks.—Center point of black lantern on brown caisson structure known as Sandy Point Light-house.

References.—

	°	'	"	
"Bay Side".....	S 64	14	W	½ mile.

RING.

Locality.—Shore of bay on west side of Kent Island about 2 miles south-southwest of Love Point and 3 miles east of Sandy Point Light. (See Progress map.)

Observed station is about 20 feet above and 35 feet back from high-water mark. It is in a cultivated field on top of bank and about 6 feet back from edge. Cement monument marking reference station is 9.36 meters east of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with its top 3 inches below the surface. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sandy Point Light" (N 84° 56' W).....	0	00	00	3 miles.
Cupola on barn.....	117	51	..	1 mile.
South chimney on white house.....	141	00	..	¼ mile.
REFERENCE STATION.....	164	17	10	9.36 meters.
Lone tree (2 inches diameter).....	224	10	..	300 yards.
South chimney on white house.....	238	56	..	300 yards.

BAY SIDE.

Locality.—West shore of bay on Sandy Point about $\frac{1}{2}$ mile west-southwest of Sandy Point Light and about $\frac{1}{4}$ mile southeast of Bay Side Farm dwellings. (See Chart No. 2.)

Observed station is on low sandy point about 2 feet above and 75 yards back from high-water mark and 14 paces east of road to Bay Side house. A number of small locust trees stand in the immediate vicinity.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sandy Point Light" (N 64° 13' E)	0	00	00	$\frac{1}{2}$ mile.
Nail in locust tree (8 inches diameter)	128	45	..	19.69 meters.
Nail in locust tree (6 inches diameter)	173	46	..	17.02 meters.
West chimney of Bay Side Farm house	245	56	..	350 yards.
West cupola on Bay Side barn	249	45	..	400 yards.
West peak of small house (red roof)	275	40	..	300 yards.

CLUMP.

Locality.—West shore of bay about one-third way from Hackett Point to Sandy Point on the narrow neck of land east of Goose Pond. (See Chart No. 2.)

Observed station is 3 feet above and 15 feet back from high-water mark. A group of pine trees stand west of station. Cement monument marking reference station is 6.24 meters west of observed station.

Marks.—Observed station is a nail in a stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sandy Point Light" (N 47° 47' E)	0	00	00	2 miles.
West chimney of white house on Kent Island abreast of station	62	12	..	4 miles.
Nail in blaze on pine tree (10 inches diameter) ..	185	58	..	8.00 meters.
St. Anne's Church spire in Annapolis	202	44	..	4 miles.
Statehouse Dome	206	35	..	4 miles.
REFERENCE STATION	218	01	40	6.42 meters.
Nail in blaze on pine tree (10 inches diameter) ..	247	17	..	8.68 meters.
West chimney of white house	313	09	..	1 mile.

WASH.

Locality.—East shore of bay, on west side of Kent Island, about $\frac{1}{2}$ mile south of entrance to Broad Creek. (See Progress map.)

Observed station is in a cultivated field about 30 feet back from edge of bluff 15 feet high and about 15 feet south of a small gully making in from bay. Cement monument marking reference station is 12.90 meters east of observed station.

Marks.—Observed station is a nail in a stub flush with ground. Reference station is center of triangle on standard cement monument.

References.—

	°	'	"	
"Sandy Point Light" (N 36° 19' W)	0	00	00	3½ miles.
West chimney of house	116	24	..	$\frac{1}{2}$ mile.
East chimney of white house	149	38	..	400 yards.
REFERENCE STATION	156	11	10	12.90 meters.
Cupola on barn	164	09	..	400 yards.
Lone tree (2½ feet diameter)	195	32	..	150 yards.
Tree (15 inches diameter)	208	34	..	175 yards.
East chimney on white house	234	38	..	$\frac{1}{2}$ mile.
Thomas Point Light	260	32	..	7 miles.

HACKETT.

Locality.—North side of Annapolis Roads, on the east side of Hackett Point, about 2 miles north-east of Greenbury Light and 3 miles southwest of Sandy Point Light. (See Chart No. 2.)

Observed station is in a cultivated field about 21 feet back from edge of a bluff 15 feet high. It is about 90 feet north of the extreme southeast end of point. A number of large sandstone boulders are at the foot of the bluff near the station and a group of several stumps stand on edge of bank opposite station. Cement monument marking reference station is 8.68 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Greenbury Light" (S 52° 55' W).....	0	00	00	2 miles.
St. Anne's Church spire	24	12	..	3¼ miles.
Statehouse Dome.....	28	34	..	3¼ miles.
Chapel Dome (Naval Academy).....	31	68	..	3 miles.
REFERENCE STATION.....	57	05	00	8.68 meters.
North chimney of red roof house.....	120	15	..	¼ mile.
Sandy Point Light	172	37	..	3 miles.

SPIT.

Locality.—East shore of Whitehall Bay on west side Hackett Point about ½ mile south of Whitehall wharf and 2 miles northeast of Greenbury Point. (See Chart No. 2.)

Observed station is on low sand point about 4 feet above and 50 yards back from end of point at high water mark and is on round sand knoll about 2 feet high.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Greenbury Light" (S 43° 50' W).....	0	00	00	2 miles.
North chimney of house on opposite shore.....	23	17	..	½ mile.
North chimney of Whitehall house.....	131	25	..	½ mile.
North chimney of white house.....	139	28	..	½ mile.
Peak of small house on Whitehall wharf	155	37	..	½ mile.
Northwest corner of small shanty.....	186	40	..	100 yards.
Nail in locust tree (4 inches diameter).....	231	30	..	35 yards.
Chimney on small house.....	250	15	..	150 yards.

CHASE (WHITEHALL BAY).

Locality.—West shore of Whitehall Bay on point between Mill and Whitehall creeks about ¾ mile northwest of Hackett Point and ½ mile west by south of Whitehall wharf. (See Chart No. 2.)

Observed station is in young peach orchard about 30 feet back from edge of a bank 18 feet high. Cement monument marking reference station is 8.87 meters northeast of observed station.

Marks.—Observed station is a nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Greenbury Light" (S 26° 22' W).....	0	00	00	2 miles.
Lone tree (2 feet diameter).....	150	49	..	300 yards.
REFERENCE STATION	191	27	00	8.87 meters.
Center of Whitehall wharf house.....	230	49	..	¾ mile.
West chimney on red roof house (opposite shore)	265	50	..	¾ mile.
West edge of small shanty on beach (opposite shore)	278	18	..	½ mile.

GREENBURY.

Locality.—North side of entrance to Severn River, on Greenbury Point, about $\frac{1}{4}$ mile north of Greenbury Light-house. (See Chart No. 2.)

Observed station is 60 feet back from end of point and 15 feet above high-water mark.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Greenbury Light" (S $7^{\circ} 20'$ E).....	0	00	00	....	250 yards.
Nail in dead cherry tree (12 inches diameter) ..	6	37	..	....	11.55 meters.
Statehouse Dome.....	107	03	..	....	1 $\frac{1}{2}$ miles.
Chapel Dome (Naval Academy).....	114	37	..	....	1 $\frac{1}{2}$ miles.
Center of water tower opposite Naval Academy. 144	32	..	....		1 $\frac{1}{4}$ miles.

GREENBURY POINT LIGHT.

Locality.—North side of entrance to Annapolis Harbor, about 250 yards off shore south of Greenbury Point. (See Chart No. 2.)

Marks.—Center of black lantern on screw pile structure known as Greenbury Point Light-house.

References.—

"Greenbury"	N	7	20	W		250 yards.
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FORT.

Locality.—Northeast side of entrance to Severn River, about 1 mile northwest of Greenbury Point and 1 mile northeast of Naval Academy sea wall. (See Chart No. 2.)

Observed station is 6 feet back from top of bank protected by a masonry wall that has fallen down in places, 10 feet above high-water mark, and 2 feet north of a brick gutter on top of bank. Cement monument marking reference station is 9.12 meters north of observed station.

Marks.—Observed station is center of a 4-inch tile pipe, with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

"Horn" (S $38^{\circ} 20'$ W)	0	00	00	.....	$\frac{1}{4}$ mile.
Saint Anne's Church spire	30	11	..	....	1 $\frac{1}{4}$ miles.
Statehouse Dome.....	41	23	..	....	1 $\frac{1}{4}$ miles.
Chapel Dome (Naval Academy)	48	06	..	....	1 mile.
South chimney of yellow house (red roof)	88	37	..	....	80 yards.
REFERENCE STATION.....	150	00	40	.....	9.12 meters.
Greenbury Light.....	296	12	..	....	1 $\frac{1}{4}$ mile.

BLUFF (SEVERN RIVER).

Locality.—East side of Severn River, on high bluff, opposite Santee Wharf of Naval Academy. (See Chart No. 2.)

Observed station is 6 feet back from edge of bank 25 feet high. Cement monument marking reference station is 11.842 meters northeast of observed station.

Marks.—Observed station is center of a 4-inch tile pipe, with top 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

"Hospital" (N $80^{\circ} 00'$ W)	0	00	00	.....	$\frac{3}{4}$ mile.
West chimney of yellow house	51	13	..	....	$\frac{1}{4}$ mile.
Nail in blaze on locust tree (18 inches diameter).....	106	09	..	....	25.93 meters.
REFERENCE STATION.....	126	56	20	.....	11.84 meters.
Nail in blaze on locust tree (8 inches diameter). 163	46	..	....		26.27 meters.
Statehouse Dome.....	318	54	..	....	$\frac{3}{4}$ mile.
Chapel Dome (Naval Academy).....	322	01	..	....	$\frac{3}{4}$ mile.
Saint John's College.....	329	25	..	....	$\frac{3}{4}$ mile.

BRICE.

Locality.—Northeast shore of Severn River on Brice Point near northeast end of County Bridge. (See Chart No. 2.)

Observed station is 15.40 meters northeast of end of rail of County Bridge about 9 yards north of center of County road and 25 yards west of small pond. It is 3 feet above and 75 feet back from high-water mark.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Bluff" (S 46° 01' E).....	0	00	00	¾ mile.
Chapel Dome (Naval Academy).....	50	23	..	½ mile.
Statehouse Dome.....	61	51	..	¾ mile.
Lowest bolt head in end post of ground rail on County Bridge.....	65	24	..	15.40 meters.
Chimney on bridge-tender's house.....	101	18	..	¼ mile.
South chimney of yellow house.....	157	50	..	¾ mile.
Chimney on slate-covered house.....	190	18	..	½ mile.
North chimney of yellow house.....	199	26	..	½ mile.
Nail in blaze on locust tree (4 inches diameter).....	208	15	..	10.89 meters.
West chimney of house.....	267	17	..	¼ mile.
Nail in blaze on locust stump (4 inches diam- eter).....	339	23	..	4.29 meters.

KNOB.

Locality.—North shore of Severn River about 150 yards northwest by north of north end Maryland Electric Railway Bridge. (See Chart No. 2.)

Observed station is on round knob-hill about 15 feet above and 30 feet back from high-water mark. Cement monument marking reference station is 11.28 meters northeast of observed station.

Marks.—Observed station is a nail in pine stub projecting 4 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Weems" (N 88° 48' W).....	0	00	00	¾ mile.
South peak of yellow house.....	27	08	..	2 miles.
North chimney of yellow house.....	110	41	..	250 yards.
REFERENCE STATION.....	124	49	40	11.28 meters.
Chimney on small shanty on railroad bridge..	203	44	..	150 yards.
Chapel Dome (Naval Academy).....	254	25	..	1½ miles.
Hospital (covered chimney or cupola).....	261	25	..	1¼ miles.
Statehouse Dome.....	263	14	..	1¾ miles.

SPRING.

Locality.—Northeast shore of Severn River about ¾ mile above the Maryland Electric Railway Bridge and on first point southeast of mouth of Cool Creek. (See Chart No. 2.)

Observed station is on low sand point about 2 feet above and 45 feet back from high-water mark. It is about 15 yards west of small pond and 100 yards west of a bluff 25 feet high.

Marks.—Observed station is center point of triangle on standard cement monument. (NOTE.—This monument replaces a 4-inch tile pipe marking old station.)

References.—

	°	'	"	
"Field" (S 29° 24' E).....	0	00	00	1 mile.
Chapel Dome (Naval Academy).....	4	07	..	2 miles.
North chimney on red house (opposite shore)..	74	43	..	¼ mile.
Chimney on white house (opposite shore).....	90	06	..	¼ mile.
North chimney of yellow house.....	207	25	..	200 yards.
Oak stump (5 inches diameter).....	228	39	..	2.35 meters.
Nail in blaze on locust tree (8 inches diameter).....	291	03	..	7.25 meters.
Water tower (opposite Naval Academy).....	340	07	..	2 miles.

COOL.

Locality.—Northeast shore of Severn River on point between Chase and Cool Spring creeks and about $1\frac{1}{4}$ miles above the Maryland Electric Railway Bridge. (See Chart No. 2.)

Observed station is on low point of land about 2 feet above and 20 feet back from high-water mark and is 7 feet south of small drain ditch 2 feet wide. Cement monument marking reference station is 7.25 meters north-northeast of observed station.

Marks.—Observed station is center of 4-inch tile pipe flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Weems" (S 26° 14' E)	0	00	00	$\frac{1}{4}$ mile.
Chimney on white house (opposite shore)....	13	23	..	$\frac{1}{2}$ mile.
Chimney on small white shanty (opposite shore).....	53	39	..	$\frac{1}{2}$ mile.
Chimney on yellow house (opposite shore)....	139	15	..	1 mile.
West chimney of house.....	180	42	..	$\frac{1}{2}$ mile.
Nail in blaze on persimmon tree (4 inches diameter)	184	21	..	16.50 meters.
REFERENCE STATION	221	29	10	7.25 meters.
Nail in blaze on oak tree (12 inches diameter). 311	04	..	..	14.82 meters.
Water tower (opposite Naval Academy)	336	13	..	2 $\frac{1}{2}$ miles.

CHASE (SEVERN RIVER).

Locality.—Northeast shore of Severn River on point on northwest side of entrance to Chase Creek. (See Chart No. 2.)

Observed station is on low marshy point about 2 feet above and 18 feet back from high-water mark and 25 yards southwest of foot of a bluff 50 feet high. Cement monument marking reference station is 7.05 meters north of observed station.

Marks.—Observed station is center of 4-inch tile-drain flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cool" (S 47° 38' E).....	0	00	00	$\frac{1}{2}$ mile.
Chimney on yellow house (opposite shore)....	30	44	..	$\frac{1}{2}$ mile.
Chimney on small shanty (opposite shore)....	38	01	..	$\frac{1}{2}$ mile.
Middle window of yellow house (abreast of station).....	77	02	..	$\frac{1}{4}$ mile.
North chimney of red roof house (opposite shore) 102	04	..	..	$\frac{1}{4}$ mile.
Chimney on yellow house (opposite shore)	146	26	..	$\frac{1}{2}$ mile.
REFERENCE STATION	241	31	30	7.05 meters.
North chimney of white house	306	34	..	1 mile.

POINT.

Locality.—Northeast shore of Severn River about $\frac{1}{2}$ mile east-southeast of Brewer Point and on second point northwest of mouth of Chase Creek. (See Chart No. 2.)

Observed station is back of a long, low marsh point and about 25 feet up side of slope. Two lone cedar trees stand on prominent hill about 150 yards to the northeast of station. Several old apple trees stand in the immediate vicinity of station.

Marks.—Observed station is center point of triangle on standard cement monument. (NOTE.—This monument replaces a 4-inch drain tile marking old station.)

References.—

	°	'	"	
"Salt" (S 1° 44' W).....	0	00	00	$\frac{3}{4}$ mile.
Chimney on yellow house (opposite shore)....	43	24	..	$\frac{1}{2}$ mile.
Southwest corner of house	139	43	..	$\frac{3}{4}$ mile.
Nail in apple tree (12 inches diameter)	233	34	..	12.55 meters.
Windmill.....	255	15	..	250 yards.
Nail in apple tree (15 inches diameter)	280	38	..	5.70 meters.

BIGHT.

Locality.—Northeast shore of Severn River about $\frac{1}{2}$ mile northeast of Brewer Point and $\frac{1}{2}$ mile southeast of Arnold Point. (See Chart No. 2.)

Observed station is on low, narrow neck of land and about 2 feet above and 15 feet back from high-water mark. It is 15 feet south of foot of slope to a yellow sand bluff 60 feet high. A group of holly trees stand about 10 feet east of station. Cement monument marking reference station is 11.64 meters northeast of observed station.

Marks.—Observed station is a nail in a stub set in center of a 4-inch tile pipe. Reference station is center point of triangle on standard cement monument.

References.

	°	'	"	
"Clem" (S 7° 45' W)	0	00	00	$\frac{3}{4}$ mile.
South chimney of yellow house (opposite shore)	36	56	..	$\frac{1}{2}$ mile.
Northwest corner of unpainted house (opposite shore)	144	17	..	$\frac{1}{4}$ mile.
Nail in blaze on leaning pine tree (12 inches diameter)	175	29	..	3.72 meters.
REFERENCE STATION	201	34	20	11.64 meters.
Nail in blaze on holly tree (4 inches diameter)	251	05	..	3.79 meters.
East cedar tree of two standing close together (first hill south)	353	09	..	$\frac{1}{2}$ mile.

ARNOLD.

Locality.—Northeast shore of Severn River on Arnold Point on northwest side of entrance to Aisquith Creek and about $\frac{1}{2}$ mile north of Brewer Point. (See Chart No. 2.)

Observed station is at foot of slope meeting a long, narrow, low neck of land extending about 200 yards southeast of station. It is 3 feet above and 12 feet back from high-water mark. A small holly tree stands about 15 feet east of station. Cement monument marking reference station is 3.75 meters north of observed station.

Marks.—Observed station is a nail in stub set in a tile pipe with top 3 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.

	°	'	"	
"Brewer" (S 6° 28' E)	0	00	00	$\frac{1}{2}$ mile.
Center of cottage on Long Point	123	08	..	1 $\frac{1}{2}$ miles.
Nail in blaze on cedar tree (10 inches diameter)	138	57	..	5.96 meters.
REFERENCE STATION	167	16	40	3.75 meters.
Northwest corner of small house up Aisquith Creek	255	30	..	$\frac{1}{2}$ mile.
Nail in blaze on locust tree (4 inches diameter)	293	33	..	8.31 meters.
Chimney on yellow house (opposite shore)	358	09	..	1 mile.

SWAN.

Locality.—Northeast shore of Round Bay in Severn River on north side of entrance to Ringold Cove about $1\frac{1}{4}$ miles northeast by east of Long Point. (See Chart No. 2.)

Observed station is about 100 yards north of entrance to Ringold Cove; about 2 feet above and 15 feet back from high-water mark and 25 feet west of a bluff 25 feet high. Cement monument marking reference station is 7.78 meters east of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top 1 foot below surface of ground. Reference station is center point of triangle on standard cement monument.

References.

	°	'	"	
"Long" (S 73° 38' W)	0	00	00	$1\frac{1}{4}$ miles.
Peak of yellow house (opposite shore)	17	04	..	$1\frac{1}{2}$ miles.
West chimney of white house	62	54	..	$1\frac{1}{2}$ miles.
North tangent of brown wharf house	81	53	..	$\frac{3}{4}$ mile.
Nail in pine tree (15 inches diameter)	125	42	..	12.76 meters.
REFERENCE STATION	165	39	30	7.78 meters.
Nail in red oak tree (2 feet diameter)	178	03	..	12.50 meters.

HIGH.

Locality.—Northeast shore of Round Bay in Severn River on Eagle nest Point and on ground occupied by the Round Bay Resort. (See Chart No. 2.)

Observed station is 15 feet back from the edge of a bank 20 feet high and 25 paces southwest of the southwest corner of the dancing pavilion. Cement monument marking reference station is 8.66 meters northeast of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top 1 foot below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Swan" (S 33° 19' E)	0	00	00	¾ mile.
Chimney on house (opposite shore)	48	35	..	1½ miles.
Chimney on cottage on Long Point	65	31	..	1 mile.
Green water tower	154	44	..	¾ mile.
Nail in blaze on pine tree (8 inches diameter) ..	193	07	..	7.98 meters.
Southwest corner dancing pavilion	221	57	..	25 yards.
REFERENCE STATION	235	07	20	8.66 meters.
Nail in blaze on pine tree (7 inches diameter) ..	254	07	..	7.58 meters.

CEDAR (SEVERN RIVER).

Locality.—Upper end of Round Bay in Severn River on Cedar Point. It is on the southeast side of entrance to Yantz Creek. (See Chart No. 2.)

Observed station is 2 feet above and 50 feet back from high-water mark at the extreme west end of Cedar Point. Several cedar trees stand just east of station. Cement monument marking reference station is 7.92 meters east of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top 1 foot below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"High" (S 76° 39' E)	0	00	00	1 mile.
Chimney on red roof of cottage	2	29	..	1¼ miles.
Chapel Dome (Naval Academy)	39	31	..	7 miles.
Chimney on old house	210	57	..	1 mile.
Chimney on yellow house	230	58	..	½ mile.
Nail in blaze on locust tree (3 inches diameter) ..	288	17	..	10.56 meters.
REFERENCE STATION	302	20	10	7.92 meters.
Green water tower	339	33	..	½ mile.

SHARP.

Locality.—Southwest shore of Round Bay in Severn River about ½ mile northwest of Long Point and ½ mile southeast of Cedar Point. (See Chart No. 2.)

Observed station is on the first low point above Long Point, and is 2 feet above and 25 feet back from high-water mark. A wooded bluff is 100 feet west of station. Cement monument marking reference station is 5.31 meters southwest of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top 1 foot below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"High" (N 63° 51' E)	0	00	00	1 mile.
Cupola on brown wharf (opposite shore)	6	27	..	1 mile.
Chimney on red-roof cottage (opposite shore) ..	14	32	..	1 mile.
Nail in blaze on locust tree (3 inches diameter) ..	132	46	..	8.03 meters.
REFERENCE STATION	158	10	30	5.31 meters.
Chimney on yellow house	272	31	..	1½ miles.
Green water tower (opposite shore)	317	24	..	1 mile.

Survey of Oyster Bars, Anne Arundel County, Md.

LONG.

Locality.—North side of entrance to Little Round Bay in Severn River on Long Point, about $\frac{1}{2}$ mile northeast of St. Helena Island. (See Chart No. 2.)

Observed station is on a low marsh point about 2 feet above and 12 feet back of high-water mark. A small cottage stands about 30 yards north of station. Cement monument marking reference station is 5.05 meters northwest of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top 1 foot below surface of ground. Reference station is center point of triangle of standard cement monument.

References.—

	°	'	"	
"Bay" (S 18° 26' E)	0	00	00	$\frac{1}{4}$ mile.
West chimney on house (opposite shore).....	14	59	..	$\frac{3}{4}$ mile.
Nail in blaze on white oak tree (4 inches diameter).....	93	11	..	10.19 meters.
REFERENCE STATION.....	136	58	20	5.05 meters.
Peak of cottage	153	36	..	30 yards.
Nail in blaze on pine tree (8 inches diameter) .	170	52	..	10.97 meters.
Cupola on brown wharf (opposite shore).....	237	32	..	1 mile.
Chimney on red-roof cottage.....	247	09	..	1 mile.

ISLAND.

Locality.—Little Round Bay in Severn River on the southeast point of St. Helena Island. (See Chart No. 2.)

Observed station is on a low marsh point about 2 feet above and 15 feet back from high-water mark and 25 feet south of foot of round hill 15 feet high. Cement monument marking reference station is 7.74 meters northwest of station.

Marks.—Observed station is center of a 4-inch tile pipe with top 1 foot below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Bay" (S 53° 19' E)	0	00	00	$\frac{3}{4}$ mile.
South chimney on house.....	95	35	..	1 $\frac{1}{2}$ miles.
REFERENCE STATION	198	47	40	7.74 meters.
Nail in blaze on twin tree (6 inches diameter) .	202	04	..	9.01 meters.
Nail in blaze on twin black haw tree (6 inches diameter).....	244	50	..	5.42 meters.
Chimney on red-roof cottage (opposite shore) .	280	29	..	1 $\frac{1}{2}$ miles.
North peak of white barn (opposite shore)....	294	38	..	1 $\frac{1}{2}$ miles.
Chimney on north end small house (opposite shore)	306	12	..	2 miles.

BAY (SEVERN RIVER).

Locality.—Southwest shore of Severn River on south side of entrance to Round Bay, about $\frac{3}{4}$ mile southeast of St. Helena Island and $\frac{1}{4}$ mile south by east of Long Point. (See Chart No. 2.)

Observed station is at high-water mark at foot of a bluff 25 feet high. Cement monument marking reference station is on slope 7.31 meters southwest of observed station.

Marks.—Observed station is center of 4-inch tile pipe projecting 10 inches above the surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Arnold" (N 80° 10' E).....	0	00	00	1 mile.
North chimney of white house (opposite shore)	6	01	..	1 $\frac{1}{2}$ miles.
Nail in blaze on white oak tree (2 feet diameter)	64	12	..	16.50 meters.
REFERENCE STATION	116	57	20	7.31 meters.
Nail in blaze on oak stump (8 inches diameter)	156	39	..	3.73 meters.
Nail in blaze on chestnut oak (15 inches diameter)	198	07	..	12.97 meters.
Southeast corner of cottage on Long Point....	260	28	..	$\frac{3}{4}$ mile.

BREWER (SEVERN RIVER).

Locality.—Southwest shore of Severn River on Brewer Point and north of mouth of Brewer Creek. (See Chart No. 2.)

Observed station is on a low sand point about 2 feet above and 10 feet back from high-water mark and about 30 yards northwest of extreme end of point. A small lone holly tree stands southwest of station and a bluff 30 feet high is 25 feet southwest. Cement monument marking reference station is 8.10 meters south of observed station.

Marks.—Observed station is a 4-inch tile pipe with top 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Point" (S 68° 37' E)	0	00	00	½ mile.
North chimney of white house (opposite shore)	4	32	..	1 mile.
Chimney in center of yellow house	30	41	..	1½ miles.
REFERENCE STATION	63	56	20	8.10 meters.
Nail in blaze on holly tree (5 inches diameter)	103	10	..	3.64 meters.
Nail in blaze on cedar tree (12 inches diameter)	165	11	..	35 yards.
North chimney of yellow house (opposite shore)	284	24	..	½ mile.
North chimney of green house, windmill in rear (opposite shore)	354	38	..	¾ mile.

CLEM.

Locality.—Southwest shore of Severn River on point between Clement Creek and Brewer Creek. (See Chart No. 2.)

Observed station is on a low sand point about 2 feet above and 35 feet back from high-water mark. Cement monument marking reference station is 10.07 meters west of observed station.

Marks.—Observed station is a nail in stub flush with ground, set in 4-inch tile pipe with top 4 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Chase" (S 75° 18' E)	0	00	00	½ mile.
Water tower (opposite Naval Academy)	22	36	..	3 miles.
Chimney in center of yellow house	34	30	..	1 mile.
North chimney of house (south side of Clement Creek)	68	20	..	½ mile.
REFERENCE STATION	134	08	30	10.07 meters.
Chimney on yellow house	161	34	..	300 yards.
Small locust tree (2½ inches diameter)	222	15	..	30 yards.
Windmill (opposite shore)	307	03	..	½ mile.

SALT.

Locality.—Southwest shore Severn River between Clement and Saltwork creeks and abreast of Chase Creek. (See Chart No. 2.)

Observed station is 10 feet back from edge of a bank 10 feet high. A number of small cedar trees stand on edge of bank in front of station. Cement monument marking reference station is 8.07 meters west of observed station.

Marks.—Observed station is a nail in stub in a 4-inch tile pipe with top 2 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cool" (S 84° 23' E)	0	00	00	¾ mile.
Water tower (opposite Naval Academy)	27	51	..	2½ miles.
Chimney in center of yellow house	34	45	..	¾ mile.
REFERENCE STATION	142	31	30	8.07 meters.
North chimney of red roof house	149	27	..	80 yards.

Center of large oak tree (2½ feet diameter)...	206	22	..	50 yards.
Chimney on yellow house	223	27	..	½ mile.
Nail in blaze on twin cedar tree (3 inches diameter)	254	40	..	5.88 meters.
Nail in blaze on cedar tree (8 inches diameter). 328	44	..	7.20 meters.	
South chimney standing alone (opposite shore). 332	35	..	1 mile.	

LUCÉ.

Locality.—Southwest shore of Severn River about 200 yards northwest of entrance to Luce Creek and 1¼ miles above Railway Bridge. (See Chart No. 2.)

Observed station is on low island at mouth of Hammond Fish Pond and about 2 feet above and 18 feet back from high-water mark. A number of small trees stand in the immediate vicinity. Cement monument marking reference station is 7.32 meters southwest of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Spring" (S 84° 24' E).....	0	00	00	¾ mile.
Chimney on yellow house first hill south.....	56	34	..	¼ mile.
Twin cedar tree (3 inches diameter).....	88	27	..	15.75 meters.
Chimney on small white shanty.....	93	28	..	200 yards.
REFERENCE STATION.....	125	09	40	7.32 meters.
Chimney on yellow house.....	218	26	..	1 mile.
East chimney on white house (opposite shore). 261	38	..	¾ mile.	
Chimney on small white house at mouth of Cool Spring Creek (opposite shore).....	342	11	..	½ mile.
Nail in blaze on persimmon tree (5 inches diameter)	355	22	..	6.07 meters.

WEEMS.

Locality.—Southwest shore of Severn River on first point south of Luce Creek and about ¾ mile above the Railway Bridge. (See Chart No. 2.)

Observed station is on low sand point covered with myrtle bushes about 2½ feet above and 75 feet back from high-water mark at end of point. The ground rises abruptly about 150 yards west of station.

Marks.—Observed station is center point of triangle on standard cement monument. (NOTE.—This monument replaces tile marking old station.)

References.—

	°	'	"	
"Field" (S 47° 40' E).....	0	00	00	1 mile.
South chimney (red house).....	99	08	..	200 yards.
Chimney in center of white house.....	142	11	..	250 yards.
North chimney of white house (opposite shore). 232	47	..	½ mile.	
North chimney of yellow house (opposite shore). 255	41	..	½ mile.	
Windmill (opposite shore).....	280	56	..	½ mile.
North chimney of yellow house (opposite shore). 308	28	..	¾ mile.	
Water tower (opposite Naval Academy).....	350	00	..	2 miles.

FIELD.

Locality.—Southwest shore of Severn River on first point east of Railway Bridge and ¼ mile north of County Bridge. (See Chart No. 2.)

Observed station is on round knob hill about 10 feet above high-water mark and 15 feet west of edge of low sand point extending 50 yards to the west.

Marks.—Observed station is center point of triangle on standard cement monument. (NOTE.—This monument replaces tile marking old station.)

<i>References.</i> —	o	/	''	
"Weems" (N 47° 39' W)	0	00	00	1 mile.
Center chimney of lead-colored house (opposite shore)	21	47	..	¾ mile.
North chimney of yellow house (opposite shore)	49	30	..	½ mile.
Blaze on pine tree (12 inches diameter)	161	26	..	10.30 meters.
Chapel Dome (Naval Academy)	206	15	..	1 mile.
Hospital cupola	214	10	..	¾ mile.
Blaze on poplar tree (12 inches diameter)	326	46	..	7.18 meters.

HOSPITAL CUPOLA (NAVAL ACADEMY).

Locality.—Southwest shore of Severn River on prominent hill. It is a short distance back from shore and just south of County Bridge. (See Chart No. 2.)

Marks.—Center point of cupola on new Naval Hospital.

References.—None necessary.

FLAGSTAFF (NAVAL ACADEMY BOATHOUSE).

Locality.—Naval Academy grounds near Santee Wharf. (See Chart No. 2.)

Marks.—Center of flagstaff on northwest end of boathouse at Naval Academy.

References.—None necessary.

STATEHOUSE DOME (ANNAPOLIS).

Locality.—City of Annapolis. (See Chart No. 2.)

Marks.—Center of Statehouse Dome.

References.—None necessary.

ST. ANNE'S CHURCH SPIRE (ANNAPOLIS).

Locality.—City of Annapolis. (See Chart No. 2.)

Marks.—Center of spire on St. Anne's Church.

References.—None necessary.

CATHOLIC CHURCH SPIRE (ANNAPOLIS).

Locality.—City of Annapolis. (See Chart No. 2.)

Marks.—Center of spire on Catholic Church.

References.—None necessary.

ST. JOHN'S COLLEGE CUPOLA (ANNAPOLIS).

Locality.—City of Annapolis. (See Chart No. 2.)

Marks.—Center of belfry on St. John's College.

References.—None necessary.

HORN (SEVERN RIVER).

Locality.—Southwest shore of Severn River, on Horn Point, about ¾ mile southeast of wharves in Annapolis Harbor and on south side of entrance to Spa Creek. (See Chart No. 2.)

Observed station is about 30 yards north of wire fence and 200 yards northwest of white house with red tin roof. Cement monument marking reference station is 11.24 meters west of observed station.

Survey of Oyster Bars, Anne Arundel County, Md.

Marks.—Observed station is center of a 4-inch tile pipe with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.

	°	'	"	
"Greenbury Light-house" (S 74° 51' E)	0	00	00	1 mile.
Chimney on yellow house	86	05	..	1½ mile.
REFERENCE STATION	134	55	50	11.24 meters.
Statehouse Dome	190	51	..	1 mile.
St. John's College	198	58	..	1 mile.
Chapel Dome (Naval Academy)	208	13	..	¾ mile.

START.

Locality.—Southwest shore of Annapolis Roads, about ½ mile south of Horn Point and 1 mile west of Greenbury Light-house. (See Chart No. 2.)

Observed station is on wooded shore 15 feet back from edge of a bank 7 feet high. Cement monument marking reference station is 8.45 meters west of observed station.

Marks.—Observed station is a nail in a stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.

	°	'	"	
"Greenbury Light" (N 74° 50' E)	0	00	00	1 mile.
Tangent to Tolly Point	67	00	..	2 miles.
Extreme west point of roof of Bay Ridge Hotel.	72	20	..	2 miles.
Nail in blaze on oak tree (12 inches diameter)	144	41	..	16.26 meters.
REFERENCE STATION	171	22	20	8.45 metres.
Nail in blaze on oak tree (8 inches diameter)	236	32	..	11.38 meters.
Water tower (opposite Naval Academy)	286	27	..	1¼ miles.

GRAM.

Locality.—Southwest shore of Annapolis Roads near northwest entrance to Cat Hole Creek and about 1½ miles south-southwest of Greenbury Light. (See Chart No. 3.)

Observed station is 55 feet back from edge of a bluff 30 feet high. A small round knoll is 60 feet west and 5 feet higher than station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.

	°	'	"	
"Greenbury Light" (N 31° 53' E)	0	00	00	1½ miles.
Nail in blaze on small locust tree (3 inches diameter)	97	34	..	26.40 meters.
North tangent of roof of old Bay Ridge Hotel.	103	18	..	1 mile.
Nail in blaze on locust stump (4 inches diameter)	312	43	..	22.95 meters.
Tangent to Horn Point	314	15	..	1½ miles.
Water tower (opposite Naval Academy)	322	15	..	2 miles.
South chimney of house on Greenbury Point	351	46	..	2 miles.

TOLLY.

Locality.—South side of entrance to Annapolis Roads about 150 yards northwest of Tolly Point. (See Chart No. 3.)

Observed station is on low point of land. It is about 1 foot above and 12 feet back from high-water mark, and 175 yards northeast of old Bay Ridge Hotel. Cement monument marking reference station is 10.86 meters southwest of observed station.

Marks.—Observed station is a nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Greenbury Light" (N. 6° 12' W).....	0	00	00	1¾ miles.
Peak of Whitehall house.....	21	15	..	4 meters.
Nail in blaze on holly tree (12 inches diameter)	205	14	..	9.65 meters.
REFERENCE STATION	229	35	30	10.86 meters.
Nail in blaze on swamp-oak tree (18 inches diameter).....	258	12	..	10.97 meters.
Chapel Dome (Naval Academy).....	331	05	..	3½ miles.
Water tower (opposite Naval Academy).....	346	13	..	3½ miles.

BAY RIDGE STACK.

Locality.—Bay Ridge Resort on Tolly Point. (See Chart No. 3.)

Marks.—Center of highest part of brick smokestack.

References.—None necessary.

CRANEY.

Locality.—Eastern shore of bay on west side of Kent Island, about ½ mile north of Craney Creek and 4½ miles east of Tolly Point. (See Chart No. 3.)

Observed station is 3 feet above and 30 feet back from high-water mark, on a low sandy cultivated field. A group of farm buildings stand about ¼ mile away. Cement monument marking reference station is 4.88 meters east-northeast of observed station.

Marks.—Observed station is a nail in a wooden stub projecting 3 inches above the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Thomas Point Light" (S 56° 45' W)	0	00	00	4¾ miles.
Greenbury Light	57	27	30	5¼ miles.
Sandy Point Light	111	26	30	5¾ miles.
REFERENCE STATION	208	51	10	4.88 meters.
Cupola on barn ..	258	11	..	¼ mile.
Extreme south tangent to Kent Island.....	310	52	..	6 miles.

COTTAGE.

Locality.—West shore of bay near group of cottages called "Arundel on the Bay"¹⁾ about 2 miles northwest of Thomas Point Light. (See Chart No. 3.)

Observed station is 12 feet back from edge of a bank 18 feet high. It is about 25 yards north of steamboat wharf and 3 yards east of east edge of a foot-board walk 36 paces southeast of Concord Cottage. Cement monument marking reference station is 13.70 meters west of observed station.

Marks.—Observed station is a nail in a stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Thomas Point Light" (S 41° 12' E)	0	00	00	2 miles.
Tangent to Thomas Point.....	15	33	..	1 mile.
Green ball on north end of playhouse	26	55	..	80 yards.
Flag pole on pavilion ..	61	10	..	..
REFERENCE STATION	114	57	10	13.70 meters.
Nail in blaze on oak tree (12 inches diameter). ..	115	07	..	15.50 meters.
Peak of circular red roof bath house in water. ..	211	01	..	300 yards.
Stack at Bay Ridge.....	236	04	..	1¼ miles.
North flag pole on wharf	305	37	..	75 yards.

THOMAS.

Locality.—West shore of bay on a small island known as Thomas Point. It is on the north side of entrance to South River and about $1\frac{1}{4}$ miles northwest of Thomas Point Light. (See Chart No. 3.)

Observed station is 30 feet back from top of bank and about 100 feet west of extreme east end of point. Cement monument marking reference station is 7.66 meters north of observed station.

Marks.—Observed station is a nail in stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Thomas Point Light" (S 56° 08' E).....	0	00	00	$1\frac{1}{4}$ miles.
White house on Curtis Point.....	87	43	..	$4\frac{1}{2}$ miles.
Peak of white house	182	06	..	$\frac{3}{4}$ mile.
Flag pole on wharf house	115	45	..	$1\frac{1}{2}$ miles.
REFERENCE STATION.....	218	43	20	7.66 meters.
Nail in blaze on ash tree (15 inches diameter). 284	59	..	..	13.31 meters.
Nail in blaze on locust tree (5 inches diameter). 353	34	..	..	9.64 meters.

THOMAS POINT LIGHT.

Locality.—Off entrance to South River and about $1\frac{1}{4}$ miles southeast of Thomas Point. (See Chart No. 3.)

Marks.—Center of black lantern on white hexagonal screw pile structure known as Thomas Point Light-House.

References.—

	°	'	"	
"Thomas".....	(N 56° 07' W)	..	..	$1\frac{1}{4}$ miles.

ARUNDEL.

Locality.—North side of entrance to South River on narrow neck of land between Fishing Creek and South River. (See Chart No. 3.)

Observed station is about 5 feet above and 75 feet back from high-water mark in Fishing Creek. A sand road is 25 feet west of station. Cement monument marking reference station is 4.07 meters northeast of observed station.

Marks.—Observed station is center point of a 4-inch tile pipe with top 1 foot below the surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Selby" (S 81° 28' W)	0	00	00	$1\frac{1}{4}$ miles.
South peak of white house (opposite shore)....	1	55	..	$2\frac{1}{2}$ miles.
Tangent to Point.....	34	50	..	$1\frac{1}{2}$ miles.
REFERENCE STATION.....	144	11	40	4.07 meters.
Nail in blaze on twin locust tree (6 inches diameter).....	145	25	..	7.22 meters.
South peak of long barn across Fishing Creek..	154	49	..	$\frac{1}{2}$ mile.
Nail in apple tree (15 inches diameter).....	234	30	..	8.77 meters.
Chimney on red roof cottage.....	251	11	..	300 yards.

HILL.

Locality.—Northeast shore of South River on Hills Point and on west side of entrance to Duvalls Creek. (See Chart No. 3.)

Observed station is 50 feet back from the extreme south end of Hills Point and 35 feet above high-water mark. Cement monument marking reference station is 8.07 meters northeast of observed station.

Marks.—Observed station is a nail in a pine stub projecting 3 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

		°	'	"	
"Selby" (S 17° 28' E)	0	00	00	.....	1 mile.
Chimney on house (opposite shore)	63	01	..	.....	1½ miles.
South chimney on almshouse	136	51	..	.....	2½ miles.
Nail in blaze on locust tree (4 inches diameter) ..	213	33	..	.....	5.42 meters.
Water tower at South River Club	233	28	..	.....	¾ mile.
REFERENCE STATION	235	22	50	.....	8.07 meters.
Nail in blaze on locust tree (6 inches diameter) ..	257	59	..	.....	4.67 meters.
North peak of barn	249	24	..	.....	½ mile.

SWITCH.

Locality.—Northeast shore of South River on point on southwest side of entrance to Aberdeen Creek. (See Chart No. 3.)

Observed station is on the south side of a low sand point and at high-water mark. A number of cedar trees stand in the immediate vicinity. Cement monument marking reference station is 8.41 meters north of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top 2 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

		°	'	"	
"Hill" (S 56° 19' E)	0	00	00	.....	1 mile.
Chimney on house (opposite shore)	42	46	..	.....	1 mile.
East chimney of house (opposite shore)	161	25	..	.....	1 mile.
South chimney on almshouse	172	47	..	.....	1½ miles.
REFERENCE STATION	206	02	00	.....	8.41 meters.
Nail in blaze on cedar tree (7 inches diameter) ..	213	36	..	.....	3.58 meters.
Nail in blaze on leaning cedar tree	242	07	..	.....	12.76 meters.

WAGGAMAN.

Locality.—Northeast shore of South River on first point to south of entrance to Cross Creek and about 90 meters north of Ferry Point and Waggaman wharf house. (See Chart No. 3.)

Observed station is on top of a bluff 25 feet high and 15 feet back from the edge. Waggaman's dwelling is about 100 yards east of station. Cement monument marking reference station is 2.57 meters east of observed station.

Marks.—Observed station is a nail in a pine stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

		°	'	"	
"Almshouse" (S 37° 10' W)	0	00	00	.....	½ mile.
North chimney of almshouse	10	21	..	.....	½ mile.
Cupola on barn (opposite shore)	39	18	..	.....	½ mile.
North peak of Lee wharf house	59	10	..	.....	1 mile.
Nail in blaze on pine tree (4 inches diameter) ..	198	56	..	.....	4.70 meters.
REFERENCE STATION	223	30	50	.....	2.57 meters.
Waggaman's windmill	233	03	..	.....	100 yards.
Nail in blaze on locust tree (8 inches diameter) ..	257	50	..	.....	9.41 meters.
Flag pole on Waggaman's house	302	33	..	.....	100 yards.

WAGGAMAN WINDMILL.

Locality.—Northeast shore of South River on Ferry Point.

Marks.—Observed station is center of Waggaman's windmill.

References.—None necessary.

GINGER.

Locality.—Northeast shore of South River, on prominent point on north side of Church Creek, about $\frac{1}{2}$ mile east of South River Bridge. (See Chart No. 3.)

Observed station is 17 feet back from edge of a bluff 35 feet high. A number of trees stand in the immediate vicinity. Cement monument marking reference station is 7.81 meters north of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top 2 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Larramore" (N 86° 25' W)	0	00	00	1 mile.
Nail in blaze on oak tree (18 inches diameter)	19	36	..	9.05 meters.
Peak of Edgewater post-office	21	28	..	$\frac{1}{2}$ mile.
Nail in blaze on mulberry tree (2 inches diameter)	45	27	..	12.27 meters.
REFERENCE STATION	97	48	10	7.81 meters.
Nail in blaze on locust tree (8 inches diameter)	187	46	..	5.92 meters.
Waggaman's windmill	197	07	..	$\frac{3}{4}$ mile.
North chimney of almshouse	239	05	..	$\frac{3}{4}$ mile.
Cupola on barn	272	58	..	$\frac{1}{2}$ mile.
Peak of wharf house	335	45	..	$\frac{1}{2}$ mile.

XIMO.

Locality.—Upper end of South River, near north entrance to South River Bridge crossing river at Edgewater. (See Chart No. 3.)

Observed station is about 10 feet from high-water mark on sand beach near east edge of South River Road. It is on line with east guard rail of bridge and 18 feet distant from end of rail.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Larramore" (S 83° 21' W)	0	00	00	$\frac{3}{4}$ mile.
East peak of roof of Edgewater post-office	119	45	..	75 yards.
North chimney of almshouse	234	48	..	1 mile.
North peak of wharf house	294	51	..	$\frac{1}{4}$ mile.
East chimney of white house (opposite shore)	315	59	..	$\frac{3}{4}$ mile.

YAZOO.

Locality.—North shore of upper South River about $\frac{1}{4}$ mile above South River Bridge. (See Chart No. 3.)

Observed station is on low marsh point about 1 foot above and 8 feet back from high-water mark. A lone tree stands west of station on opposite shore. Cement monument marking reference station is 9.96 meters northwest of observed station.

Marks.—Observed station is a nail in pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Larramore" (S 26° 29' W)	0	00	00	$\frac{1}{4}$ mile.
Lone cedar tree on opposite shore	5	09	..	$\frac{1}{4}$ mile.
North peak of wharf house	47	26	..	1 mile.
REFERENCE STATION	109	45	40	9.96 meters.
Nail in blaze on twin oak tree (5 inches diameter)	134	51	..	5.27 meters.
Nail in blaze on red-oak tree (5 inches diameter)	160	44	..	11.37 meters.
North chimney of almshouse	286	16	..	1 $\frac{1}{2}$ miles.
North peak of Lee's wharf house	303	32	..	$\frac{3}{4}$ mile.

TAYLOR.

Locality.—North shore of upper South River about $\frac{3}{4}$ mile above County bridge and opposite the entrance to Beards Creek. (See Chart No. 3.)

Observed station is 17 paces back from the extreme south end of a low sand point. It is 1 foot above and 8 feet back from high-water mark. Several small persimmon trees stand near station. Cement monument marking reference station is 4.22 meters west of observed station.

Marks.—Observed station is a nail in a pine stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Larramore" (S 57° 15' E).....	0	00	00	$\frac{1}{4}$ mile.
West chimney of white house (opposite shore) .	11	04	..	$\frac{1}{2}$ mile.
North chimney of yellow house (opposite shore) 132	09	..	$\frac{1}{4}$ mile.	
REFERENCE STATION.....	139	56	50	4.22 meters.
Nail in persimmon tree (4 inches diameter)....	442	15	..	5.11 meters.
Nail in cedar tree (15 inches diameter).....	248	31	..	45 yards.
Red post on porch at Edgewater post-office....	332	44	..	1 mile.
Lone cedar tree opposite shore.....	352	54	..	300 yards.

LARRAMORE.

Locality.—South shore of upper South River near mouth of Beard Creek and about $\frac{1}{2}$ mile north-east of County Bridge. (See Chart No. 3.)

Observed station is 2 feet above and 18 feet back from high-water mark. A lone cedar tree stands near the shore about 75 yards back from station. Cement monument marking reference station is 7.96 meters southwest of station.

Marks.—Observed station is a nail in a wooden stub set in a 4-inch tile pipe with top 3 inches below ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Taylor" (N 57° 14' W).....	0	00	00	$\frac{1}{4}$ mile.
Nail in blaze on leaning mulberry tree (18 inches diameter).....	..	..	..	17.85 meters.
Lone cedar tree.....	52	28	..	75 yards.
West chimney of house at Edgewater post-office.....	136	02	..	$\frac{1}{2}$ mile.
South peak of Lee's wharf house.....	175	39	..	$\frac{1}{2}$ mile.
East chimney of white house (first hill south) .	200	35	..	$\frac{1}{2}$ mile.
REFERENCE STATION.....	271	29	..	7.96 meters.

BREWER (SOUTH RIVER).

Locality.—Southwest shore of South River on point on northwest side of mouth of Almshouse Creek about $\frac{1}{4}$ mile northwest by north of County almshouse and $\frac{1}{2}$ mile west by south of Ferry Point. (See Chart No. 3.)

Observed station is 1 foot above and 10 feet from high-water mark. Cement monument marking reference station is 7.67 meters southwest of observed station.

Marks.—Observed station is a nail in a pine stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Ginger" (N 22° 00' W).....	0	00	00	$\frac{1}{2}$ mile.
Peak of yellow house (opposite shore).....	63	04	..	1 $\frac{1}{2}$ miles.
Waggaman windmill.....	100	05	..	$\frac{3}{4}$ mile.
Flag pole on Waggaman Club house.....	105	15	..	$\frac{3}{4}$ mile.
North chimney on almshouse.....	165	57	..	$\frac{1}{4}$ mile.
Nail in blaze on leaning red oak tree (12 inches diameter).....	222	55	..	6.61 meters.
REFERENCE STATION.....	257	01	00	7.67 meters.
Nail in blaze on white oak tree (3 inches diameter).....	294	44	..	9.11 meters.

ALMSHOUSE.

Locality.—Southwest shore of South River about halfway between Glebe and Almshouse creeks and about 200 yards east of County Almshouse. (See Chart No. 3.)

Observed station is on a low sod point about 6 inches above high-water mark. A group of locust trees stands just southwest of station and an old white house stands on a hill about 100 yards southwest. Cement monument marking reference station is 9.87 meters southwest of station.

Marks.—Observed station is center of a 4-inch tile pipe set flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Waggaman" (N 37° 10' E).....	0	00	00	½ mile.
Waggaman's windmill.....	5	08	..	½ mile.
Nail in blaze on locust tree (5 inches diameter) 160	15	..	..	9.76 meters.
REFERENCE STATION.....	171	06	00	9.875 meters.
Nail in blaze on locust tree (5 inches diameter) 196	08	..	..	7.84 meters.
North chimney of almshouse.....	245	17	..	200 yards.
Peak of Edgewater post-office.....	279	57	..	1½ miles.

ALMSHOUSE (LIGHTNING ROD).

Locality.—Southwest shore of South River between Glebe and Almshouse creeks near County almshouse. (See Chart No. 3.)

Marks.—Lightning rod on south chimney of almshouse.

References.—None necessary.

CEDAR (SOUTH RIVER).

Locality.—Southwest shore of South River on point between Glebe and Lonehouse creeks. (See Chart No. 3.)

Observed station is on low sand point about 1 foot above and 6 feet back from high-water mark. A number of small cedar trees stand southwest of station. Cement monument marking reference station is 5.61 meters south of observed station.

Marks.—Observed station is a nail in a stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Switch" (N 89° 57' E).....	0	00	00	¾ mile.
REFERENCE STATION.....	122	14	10	5.61 meters.
Nail in blaze on twin cedar tree (4 inches diameter)	133	24	..	5.69 meters.
Nail in blaze on locust tree (4 inches diameter) .	213	29	..	5.11 meters.
South chimney on almshouse.....	223	06	..	1 mile.
Flagstaff on Waggaman Clubhouse	253	54	..	1 mile.
Waggaman windmill.....	256	43	..	1 mile.
North chimney on brown house (opposite shore) 314	33	..	..	¾ mile.

MAYO.

Locality.—Southwest shore of South River on Mayo Point. (See Chart No. 3.)

Observed station is about 6 feet above and 40 feet back from high-water mark. A low holly bush stands 25 feet northeast and a low sand knoll 10 feet north of station. Cement monument marking reference station is 5.95 meters southwest of observed station.

Marks.—Observed station is a nail in a wooden stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Selby" (S 45° 44' E).....	0	00	00	1 mile.
REFERENCE STATION.....	87	58	10	5.95 meters.
Nail in blaze on red oak tree (12 inches diameter) 108	35	..	..	6.07 meters.
Nail in blaze on cedar tree (8 inches diameter) .	140	33	..	9.30 meters.
South chimney on almshouse	177	27	..	2¼ miles.

	°	'	"	
North chimney on Waggaman house.....	192	54	..	2¼ miles.
South chimney on red roof house (opposite shore) ..	223	53	..	¾ mile.
Green water tower (South River Club).....	270	50	..	1½ miles.
North peak of old barn	281	00	..	1 mile.

SELBY.

Locality.—Southwest shore of South River on Turkey Point. (See Chart No. 3.)

Observed station is 6 feet above high-water mark and about 250 yards south of the extreme north end of Turkey Point. A lone locust tree stands about 12 yards south of station. Cement monument marking reference station is 7.81 meters southwest of observed station.

Marks.—Observed station is center point of a pine stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Arundel" (N 81° 27' E)	0	00	00	1¼ miles.
Locust stump (1½ feet high)	7	30	..	11.30 meters.
Thomas Point Light	30	38	..	3 miles.
Nail in blaze on locust tree (12 inches diameter) ..	113	10	..	10.65 meters.
REFERENCE STATION	137	31	00	7.81 meters.
Water tower (South River Club)	276	31	..	2 miles.
Peak of red roof house (opposite shore).....	278	23	..	1½ miles.
Peak of white house (opposite shore).....	307	50	..	1½ miles.

GOWAN.

Locality.—Western shore of bay on Saunders Point between entrances to South River and West River. (See Chart No. 3.)

Observed station is 21 feet back from edge of bluff 25 feet high. Two blazed cedar trees stand about 12 yards south of station. Cement monument marking reference station is 11.320 meters west of observed station.

Marks.—Observed station is a nail in a pine stub set flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Thomas Point Light" (N 74° 06' E).....	0	00	00	3 miles.
Nail in blaze on cedar tree (10 inches diameter) ..	102	41	..	13.02 meters.
Nail in blaze on cedar tree (12 inches diameter) ..	129	43	..	9.44 meters.
Peak of white house	171	08	..	¼ mile.
REFERENCE STATION	180	13	50	11.32 meters.
South chimney of house	240	12	..	100 yards.

DUTCHMAN.

Locality.—North side of entrance to West River on Dutchman Point between shore of bay and Rhode River. (See Chart No. 3.)

Observed station is on top of a bank 12 feet high and is 10 feet back from the edge. A small lone locust tree stands about 11 yards northwest of station. Cement monument marking reference station is 10.61 meters north of observed station.

Marks.—Observed station is center of a tile pipe with top 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Curtis" (S 29° 37' E).....	0	00	00	1¼ miles.
Peak of wharf house at Nowell Pier.....	21	34	..	1 mile.
Chimney on small white house.....	85	17	..	½ mile.
Cupola on large building.....	137	22	..	1 mile.
Nail in blaze on locust tree (2 inches diameter) ..	155	03	..	10.25 meters.
Chimney on red-roof house.....	184	22	..	¼ mile.
REFERENCE STATION.....	189	50	30	11.61 meters.

CATO.

Locality.—North shore of West River on point at east side of entrance to Rhode River. (See Chart No. 3.)

Observed station is the extreme west end of a low sand point and is awash at high tide. A bank 12 feet high is 75 yards east of station. Cement monument marking reference station is 20.01 meters east-southeast of observed station.

Marks.—Observed station is an auger hole in a pine stub projecting 2 inches above the ground. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Curtis" (S 35° 25' E).....	0	00	00	1¼ miles.
Peak of wharf house (Nowell Pier).....	20	41	..	1 mile.
Chimney on white house (opposite shore)....	83	00	..	½ mile.
Cupola on large building.....	145	34	..	1 mile.
South peak of packing house.....	161	31	..	1 mile.
Peak of Carr's wharf house	189	57	..	1¼ miles.
Chimney on red-roof house	213	50	..	¼ mile.
REFERENCE STATION	310	52	20	20.01 meters.

DELTA.

Locality.—East shore of Rhode River on point south of entrance to Cadle Creek, about ½ mile north of mouth of Rhode River. (See Chart No. 3.)

Observed station is in a cultivated field about 300 yards southeast of Stiner's house and 15 yards back from edge of a bluff 12 feet high. Cement monument marking reference station is 4.32 meters northeast of observed station.

Marks.—Observed station is an auger hole in a pine stub. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Rhode" (S 26° 42' W).....	0	00	00	¼ mile.
Cupola on large building (opposite shore)....	55	11	..	½ mile.
South peak of old packing house (opposite shore)	69	12	..	¼ mile.
Southeast corner of Carr's wharf house.....	124	31	..	¾ mile.
Chimney on yellow house.....	149	43	..	¼ mile.
REFERENCE STATION.....	193	09	10	4.32 meters.
Chimney on red-roof house.....	280	50	..	300 yards.
Nail in blaze on small locust tree (3 inches diameter)	354	41	..	17.19 meters.

ETNA.

Locality.—East shore of Rhode River, about 400 yards north of mouth to Cadle Creek. (See Chart No. 3.)

Observed station is 6 feet back from edge of a bank 12 feet high and is in front of the second house north of Cadle Creek, which stands about 25 yards northeast of station. Cement monument marking reference station is 5.40 meters northeast of observed station.

Marks.—Observed station is an auger hole in a pine stub projecting 3 feet above the ground. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Turf" (S 69° 27' W).....	0	00	00	¼ mile.
North peak of Murray's wharf house	14	08	..	1 mile.
West chimney of house.....	40	18	..	1¼ miles.
Southwest corner of Carr's wharf house.....	72	05	..	¼ mile.
South chimney on red-roof house.....	83	31	..	¼ mile.
Northwest corner of picket fence.....	98	53	..	17.45 meters.
REFERENCE STATION.....	152	17	20	5.40 meters.
Southwest corner of picket fence.....	173	00	..	11.85 meters.

CALF.

Locality.—Northern shore of upper Rhode River between Whitmarsh and Waters creeks about $\frac{1}{4}$ mile west by north of Carr's wharf. (See Chart No. 3.)

Observed station is 25 feet back from edge of a bank 15 feet high. It is abreast of High Island and about 300 yards northwest of the extreme southeast end of a point of land between Whitmarsh and Waters creeks. Cement monument marking reference station is 4.96 meters northeast of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of a triangle on standard cement monument.

References.—

	°	'	"	
"Turf" (S 30° 10' E).....	0	00	00	$\frac{1}{2}$ mile.
Cupola on large house (opposite shore).....	55	07	..	$\frac{1}{2}$ mile.
Chimney on small white house (opposite shore). .	115	05	..	$\frac{1}{2}$ mile.
West chimney on red-roof house (first hill north)	129	25	..	1 mile.
Nail in blaze on pine tree (4 inches diameter)..	201	48	..	5.17 meters.
REFERENCE STATION.....	242	17	20	4.96 meters.
Southwest corner of Carr's wharf.....	307	46	..	300 yards.
Nail in blaze on small white oak tree (2 inches diameter)	327	30	00	9.15 meters.

TURF.

Locality.—West shore of Rhode River on point at right-angle bend in river and $\frac{1}{2}$ mile south of Carr's wharf. (See Chart No. 3.)

Observed station is on a low marshy point just above high-water mark. A large frame tobacco barn stands about $\frac{1}{4}$ mile southwest of station. Cement monument marking reference station is 4.83 meters west of observed station.

Marks.—Observed station is a nail in a pine stub. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Etna" (N 69° 27' E).....	0	00	00	$\frac{1}{4}$ mile.
Chimney on white house (opposite shore)....	25	47	..	$\frac{1}{2}$ mile.
Chimney on red-roof house.....	58	29	..	1 mile.
Southeast corner of old barn.....	149	04	..	$\frac{1}{4}$ mile.
Cupola on large building.....	157	36	..	$\frac{1}{4}$ mile.
REFERENCE STATION.....	179	49	00	4.83 meters.

CUPOLA.

Locality.—On west side of Rhode River about $\frac{3}{4}$ mile above its mouth and $\frac{1}{4}$ mile back from shore. (See Chart No. 3.)

Marks.—Center of spindle on belfry cupola on dark colored frame barn. Bell in cupola under spindle.

References.—None necessary.

RHODE.

Locality.—West shore of Rhode River on point about $\frac{1}{2}$ mile north of its mouth. (See Chart No. 3.)

Observed station is on a low sand point just above high-water mark and about 60 feet west of the extreme east end of point. Cement monument marking reference station is 7.39 meters west of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Delta" (N 26° 40' E).....	0	00	00	½ mile.
Chimney on red-roof house	31	14	..	¼ mile.
West chimney on red-roof house	146	08	..	1 ½ miles.
Nail in blaze on twin locust tree (4 inches diameter).....	181	59	..	27.57 meters.
Nail in blaze on locust tree (5 inches diameter)	208	14	..	24.25 meters.
REFERENCE STATION	216	02	20	7.39 meters.
Cupola on large building	261	38	..	½ mile.

CHES.

Locality.—North shore of West River on point at west side entrance to Rhode River and about 300 yards east of entrance to Chestons Creek. (See Chart No. 3.)

Observed station is 21 feet back from the edge of a bank 15 feet high. A twin locust stump stands about 2 yards southeast of station. Cement monument marking reference station is 8.71 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Dutchman" (N 49° 52' E).....	0	00	00	¾ mile.
Chimney on small house (opposite shore)	101	19	..	1 mile.
West chimney on red-roof house (opposite shore).....	115	41	..	1 mile.
East chimney on white house (opposite shore) .	157	13	..	1 mile.
Chimney on small house.....	219	35	..	200 yards.
REFERENCE STATION	253	53	30	8.71 meters.

ALPHA.

Locality.—North shore of West River between Scaffold and Chestons creeks and about ¾ mile north of Cedar Point. (See Chart No. 3.)

Observed station is about 10 feet above and 5 feet back from high-water mark. It is about 100 yards east of Scaffold Creek and 200 yards west of a small white shanty. Cement monument marking reference station is 8.26 meters north of observed station.

Marks.—Observed station is an auger hole in a hickory stump. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cove" (S 1° 21' E).....	0	00	00	¾ mile.
Tangent to Counallor Point	20	57	..	1 mile.
Peak of white house.....	68	17	..	½ mile.
Nail in blaze on hickory tree (7 inches diameter)	135	00	..	11.33 meters.
Nail in blaze on black oak tree (7 inches diameter).....	163	46	..	9.74 meters.
REFERENCE STATION	167	01	00	8.26 meters.
Nail in blaze on black oak	230	15	..	7.58 meters.
West chimney on house (opposite shore)	354	54	..	1 mile.

SHELL.

Locality.—West shore of Upper West River about 300 yards north of entrance to Cox Creek and ½ mile west of Cedar Point. (See Chart No. 3.)

Observed station is on an oyster shell bank about 8 feet above and 3 feet back from high-water mark. Cement monument marking reference station is 11.21 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub projecting 18 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cove" (S 88° 05' E)	0	00	00	½ mile.
Chimney on small white house (opposite shore)	11	30	..	½ mile.
North chimney on red-roof house (opposite shore)	41	30	..	¾ mile.
West chimney on house belonging to Mr. Lerch (opposite shore)	68	24	..	1 mile.
Nail in blaze on gum tree (2 feet diameter) ...	120	07	..	10.34 meters.
REFERENCE STATION	200	02	10	11.21 meters.
Nail in blaze on cedar tree (5 inches diameter) ..	213	52	..	10.60 meters.
Southwest corner of white shanty	298	07	..	1¼ miles.

COUNALLOR.

Locality.—West shore of upper West River about 250 yards north of steamboat wharf at Galesville and on south side of entrance to Cox Creek. (See Chart No. 3.)

Observed station is about 22 feet back from edge of a bluff 12 feet high. An old dead stump stands about 6 feet to the south of station. Cement monument marking reference station is 10.93 meters west of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Apple" (S 53° 50' E)	0	00	00	¼ mile.
Lerch's windmill	10	21	..	½ mile.
East chimney on Mr. Hyde's house	50	15	..	¾ mile.
Chimney on Chalk Point wharf house	72	21	..	¼ mile.
Chimney on Galesville wharf	80	20	..	250 yards.
East peak on Wayson's store	112	28	..	250 yards.
REFERENCE STATION	159	27	55	10.93 meters.
Cedar tree	207	40	..	18.25 meters.

CHALK.

Locality.—Upper West River on west side of Chalk Point about ¼ mile southeast of Galesville and 200 yards east of Chalk Point steamboat wharf. (See Chart No. 3.)

Observed station is about 4 feet above and 27 feet back from high-water mark. It is about 8 yards west of a blazed locust tree standing on edge of bank. Cement monument marking reference station is 8.15 meters west of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Apple" (N 49° 35' E)	0	00	00	¼ mile.
Lerch's windmill	25	12	..	½ mile.
Nail in blaze on twin locust tree	49	48	..	7.32 meters.
Chimney on yellow house (opposite shore)	67	11	..	¾ mile.
East chimney on Mr. Hyde's house	124	35	..	¼ mile.
REFERENCE STATION	201	59	35	8.15 meters.
Chimney on small yellow house	216	43	..	100 yards.
Chimney on Galesville wharf house	284	27	..	300 yards.

LERCH WINDMILL.

Locality.—Upper West River about ½ mile east of Chalk Point and ¾ mile southeast of Galesville near house of Mr. Lerch.

Marks.—Center of shaft at highest point of windmill.

References.—None necessary.

APPLE.

Locality.—East shore of Upper West River, abreast of Galesville, and about $\frac{3}{4}$ mile south by west of Cedar Point. (See Chart No. 3.)

Observed station is 28 feet back from edge of bank, 8 feet high. It is about 45 yards east of the southwest corner of V. Hartge's house. Cement monument marking reference station is 7.17 meters east of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Chalk" (S 49° 35' W)	0	00	00	$\frac{1}{4}$ mile.
Chimney on Chalk Point wharf house.....	16	45		$\frac{1}{4}$ mile.
Chimney on Galesville wharf house.....	40	00		$\frac{1}{2}$ mile.
East peak of Wayson's store.....	41	36		$\frac{1}{2}$ mile.
Chimney on store	64	27		$\frac{1}{2}$ mile.
Southwest corner of Hartge wharf house.....	154	38		$\frac{1}{2}$ mile.
Apple tree (6 inches diameter).....	203	02		7.22 meters.
REFERENCE STATION	236	25	30	7.17 meters.
Twin apple tree.....	294	01		11.40 meters.

COVE.

Locality.—South shore of West River, about $\frac{3}{4}$ mile northeast of Galesville, on Cedar Point. (See Chart No. 3.)

Observed station is on a low narrow neck of land, about 125 yards from its extreme south end. It is about 6 inches above high-water mark and 5 yards west of a blazed cedar stump. Cement monument marking reference station is 5.41 meters northeast of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Counallor" (S 47° 00' W).....	0	00	00	$\frac{3}{4}$ mile.
Southwest corner of small shanty (opposite shore).....	137	40		$\frac{3}{4}$ mile.
Chimney on white house (opposite shore)....	156	41		1 mile.
REFERENCE STATION	171	09	30	5.41 meters.
Nail in blaze on cedar stump (15 inches diameter)	196	03		4.60 meters.
Northwest corner of Hartge wharf house	316	46		350 yards.
Lerch's windmill.....	318	26		1 mile.

CURTIS.

Locality.—South side of entrance to West River on west side of Curtis Point. (See Chart No. 3.)

Observed station is about 10 feet above and 6 feet back from edge of bank. It is north of entrance to Parish Creek and about 250 yards northwest of a house standing back in the woods. A line of sight was cut through woods in order to see Bloody Point Bar Light. Cement monument marking reference station is about 10.82 meters southeast of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Dutchman" (N 29° 36' W).....	0	00	00	1 $\frac{1}{4}$ miles.
Peak of white house (opposite shore).....	25	43		2 miles.
Nail in blaze on gum tree (4 inches diameter),	148	05		13.63 meters.
REFERENCE STATION	156	04	20	10.82 meters.
Nail in blaze on locust tree (5 inches diameter)	197	56		15.65 meters.
South peak of wharf house.....	273	32		$\frac{1}{2}$ mile.
East chimney of yellow house.....	281	50		$\frac{3}{4}$ mile.

HORSESHOE.

Locality.—On shore of bay about $\frac{1}{4}$ mile south of eastern edge of Horseshoe Point. (See Chart No. 3.)

Observed station is on low marshy point nearly awash at high tide. It is about 300 yards east of a yellow house with three lightning rods. This house is surrounded by cedar trees. Cement monument marking reference station is 11.24 meters northwest of observed station.

Marks.—Observed station is a nail in a stub set in center of a tile pipe projecting 2 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Franklin" (S 15° 16' W).....	0	00	00	1½ miles.
South chimney on white house.....	35	58		½ mile.
Chimney on yellow house.....	56	53		300 yards.
REFERENCE STATION.....	91	30	50	11.24 meters.
Chimney on small house.....	124	05		300 yards.
West chimney of house.....	131	54		350 yards.

BLOODY POINT BAR LIGHT.

Locality.—Off eastern shore of bay, about $1\frac{1}{4}$ miles due west of the southernmost point of Kent Island and about $\frac{3}{4}$ mile west-southwest from mouth of Bloody Point Creek. (See Chart No. 3.)

Marks.—Center point of black lantern on brown caisson structure known as Bloody Point Bar Light.

References.—

"Horseshoe" (N 87° 45' W).....	5¼ miles.
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FRANKLIN.

Locality.—Western shore of bay on Franklin Point, about halfway between West River and Her-ring Bay. (See Chart No. 4.)

Observed station is on low point, covered with tufts of marsh grass, situated between the marsh and shore. It is just above high-water mark and about 80 yards in front of the northeast point of a round grove of small oak trees. Cement monument marking reference station is 6.36 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center of triangle on standard cement monument.

References.—

	°	'	"	
"Horseshoe" (N 15° 15' E).....	0	00	00	1½ miles.
Black oak tree at southeast point of round grove of trees (12 inches diameter).....	217	50		100 yards.
White oak tree abreast of station (2 feet diameter).....	248	55		80 yards.
REFERENCE STATION.....	274	47	40	6.36 meters.
Peak of small white shanty.....	342	09		¾ mile.
South peak of yellow house back of Horseshoe Point.....	353	22		1½ miles.

NUT.

Locality.—Western shore of bay, about $\frac{3}{4}$ miles northeast of mouth of Broadwater Creek. (See Chart No. 4.)

Observed station is on low marshy point, about 50 feet west of its extreme eastern end. A large brick house stands on edge of woods, about $\frac{1}{4}$ mile northwest of station. Cement monument marking reference station is 13.40 meters northwest of observed station.

Survey of Oyster Bars, Anne Arundel County, Md.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Franklin" (N 33° 37' E)	0	00	00	1¼ miles.
Peak of white barn on south side Broadwater Creek	200	58	..	1½ miles.
REFERENCE STATION	260	28	10	13.40 meters.
North chimney of brick house	273	46	..	¼ mile.
East peak of old barn	330	41	..	¾ mile.
East tangent to grove on Franklin Point	359	00	..	1¼ miles.

BROAD.

Locality.—Western shore of bay, on south side of entrance to Broadwater Creek, on the extreme north end of a narrow neck of land between the creek and the bay. (See Chart No. 4.)

Observed station is about 25 feet back from edge of bank 4 feet high. A number of cedar trees stand 20 yards northwest of station. Cement monument marking reference station is 13.29 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Nut" (N 43° 14' E)	0	00	00	1 mile.
North chimney on house across Broadwater Creek	201	21	..	¼ mile.
Chimney on house (opposite shore)	260	24	..	300 yards.
Nail in blaze on cedar tree	..	..	..	21.10 meters.
REFERENCE STATION	264	42	20	13.29 meters.
Nail in blaze on cedar tree on edge of bank (12 inches diameter)	289	07	..	30.25 meters.
East chimney of brown house (opposite shore)	295	19	..	½ mile.

PARKER.

Locality.—Western shore of bay, on north side of entrance to Herring Bay. (See Chart No. 4.)

Observed station is on a small detached sand island south of Parker Island, about 25 yards from the extreme south end and just above high-water mark. Cement monument marking reference station is 5.57 meters north of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fairhaven" (S 47° 11' W)	0	00	00	2 miles.
Chimney on white house	29	03	..	1 mile.
Chimney on small house	63	42	..	¼ mile.
West chimney on small white house	85	21	..	¼ mile.
West chimney on red-roof house	96	43	..	½ mile.
East chimney on red-roof house	115	04	..	¼ mile.
REFERENCE STATION	132	30	10	5.57 meters.

HOPKINS.

Locality.—North side of Herring Bay, on east side of entrance to Herring Creek and about 1½ miles north by west of Fairhaven Wharf. (See Chart No. 4.)

Observed station is 2 feet above and 15 feet back from high-water mark, and is nearly on line with south face of house standing just east of station. Cement monument marking reference station is 5.15 meters northwest of observed station.

Marks.—Observed station is a nail in a stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fairhaven" (S 27° 28' W).....	0	00	00	1¼ miles.
Chimney on small house (opposite shore)....	16	25	..	¼ mile.
South chimney on white house (opposite shore).....	93	21	..	¼ mile.
South chimney on yellow house (opposite shore).....	102	00	..	¼ mile.
REFERENCE STATION.....	105	44	35	5.15 meters.
West chimney on small white house.....	124	37	..	150 yards.
Northwest corner of house.....	172	19	..	16.39 meters.
Southwest corner of house.....	192	11	..	15.17 meters.

FAIRHAVEN.

Locality.—Western shore of Herring Bay on prominent bold hill about ¼ mile back from shore and ¾ mile west by north of Fairhaven wharf. (See Chart No. 4.)

Observed station is about 25 yards south of a lone chestnut tree 3 feet in diameter and about 100 yards north of highway to Friendship. Cement monument marking reference station is 6.08 meters north of observed station.

Marks.—Observed station is the center of a 4-inch tile pipe with top 8 inches below the surface. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hopkins" (N 27° 28' E).....	0	00	00	1¼ miles.
Cupola on old Fairhaven Hotel.....	45	44	..	½ mile.
East chimney on yellow house.....	51	06	..	½ mile.
West peak of Fairhaven wharf house.....	98	49	..	1 mile.
Chimney on small house close to shore.....	113	25	..	½ mile.
Post of rail fence.....	241	05	..	14.53 meters.
Nail in blaze on lone chestnut tree (3 feet diameter).....	346	37	..	25.78 meters.
REFERENCE STATION.....	351	49	50	6.08 meters.

HOLLAND.

Locality.—Western shore of bay on south side of entrance to Herring Bay about 30 yards west of Holland Point. (See Chart No. 4.)

Observed station is 5 feet back from top of a bank 7 feet high. Two large blazed trees stand south and west of station at distance 12 and 25 yards respectively. Cement monument marking reference station is 12.88 meters southwest of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fairhaven" (N 48° 13' W).....	0	00	00	2½ miles.
Nail in blaze on red oak tree (2½ feet diameter).....	238	49	..	11.17 meters.
REFERENCE STATION.....	262	05	00	12.88 meters.
Nail in blaze on red oak tree (2½ feet diameter).....	286	55	..	22.63 meters.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY.

INSTRUCTIONS.

The two following letters, together with the laws^a of the United States relating to the subject, constitute the "instructions" of the representative of the Survey. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of natural oyster bars. The "free hand" permitted by these orders proved very beneficial and was greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His Excellency Hon. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the commissioners, prepare a programme of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,
U. S. C. and G. S. Steamer "Endeavor," Baltimore, Md.

HOUSE BOAT "OYSTER."

While arranging to turn over the command of the steamer *Endeavor*, the representative of the Survey, acting under preliminary instructions from the Superintendent, was engaged in frequent consultation with the Shell Fish Commissioners in reference to the programme of future work. In addition to these duties, he undertook for the commissioners the planning and supervision necessary to convert the old side-wheel steamer *Thomas L. Worthley* into a house boat for the surveying parties of both the Commission and the Government.

^a For copies of these laws see "Introduction" to this publication.

The *Worthley*, now called the house boat *Oyster*, was in excellent condition when purchased by the Commission. The keelsons and timbers were sound and the upper works strong. After the removal of the old engine and boiler, the house boat was docked and her hull thoroughly examined. The outside planking below the water line was found in good condition, and although it was recalced, it was done as an additional precaution, the hull having been absolutely water-tight from the day of purchase.

The *Oyster* is about 135 feet over all and 35 feet in beam. The main deck contains living quarters for 27 men, the officers mess room and the galley. The upper deck has 11 staterooms, 5 for the 3 commissioners and their 2 hydrographic engineers, 4 for the Coast Survey officers, 1 for the representative of the U. S. Bureau of Fisheries, and 1 for the local county oyster commissioner. Besides these rooms, there are located on this deck a large drafting room, a laboratory for oyster investigations, and an office room. Coal for the two Government launches and the galley is stored in the hold, which also contains fresh-water tanks having a capacity of about 7,000 gallons. Signal lumber is carried on the main deck aft of the officers' mess room.

As a whole, the *Oyster* is plainly and practically equipped for the work to be done. She has added much to the amount of the surveying accomplished during the season, and the Coast and Geodetic Survey representative greatly appreciates the practical advantages furnished to his party by their quarters on the house boat. When the large party of the combined surveying forces is taken into consideration with the limited accommodations usually obtainable on shore, the attending difficulties of a scattered party, the uncertain location and supply of coal and water for launches and sufficient lumber for signals, it is easily to be seen that the amount of work accomplished would have been reduced greatly, if there had been no such house boat as the *Oyster* to supply all requirements of the surveying operations.

With reasonable care and repairs, the *Oyster* will be a valuable asset to the Commission at the completion of the oyster survey of the State, besides having paid her first cost several times over in both quality and quantity of work accomplished.

ORGANIZATION AND EQUIPMENT.

The command of the *Endeavor* was turned over to the hydrographic inspector July 9, 1906, and from that date to the commencement of active field work the Survey representative was engaged on organization of party, collection of surveying data, general supervision of the construction of the house boat, and preparation of field equipment.

Some delay was experienced in completing repairs to the Survey steam launch *Inspector*, and by the difficulties of obtaining surveying assistants who were qualified to receive an appointment under civil-service rules. In fact, the last field assistant did not take his oath of office until the middle of October.

The field organization of the party, when fully completed, remained the same during the season, and was as follows:

- C. C. Yates, assistant, Coast and Geodetic Survey, and chief of party.
- E. A. Borst, triangulator.
- N. L. Arbuckle, topographic draftsman.
- F. W. Seth, surveyman and computer.
- One launch coxswain.
- One launch engineer.
- Five seamen and hands.

Later two additional draftsmen, J. D. Torrey and G. C. Moore, were appointed and assigned to duty in the office in Washington, where they were employed on the preparation for publication of the charts of natural oyster bars, making in all a party of six officers from the Coast and Geodetic Survey engaged on the work. During the last weeks of the field work, Mr. Paul C. Whitney, assistant, Coast and Geodetic Survey, was assigned to temporary duty in the party in place of Mr. E. A. Borst, who resigned.

The equipment of the party, in addition to the quarters and accommodations on the house boat *Oyster*, consisted of the large Coast and Geodetic Survey steam launch *Inspector*, an excellent whaleboat, a large ship's cutter, and a fishing dory. The Survey also furnished a complete outfit of theodolites, levels, sextants, and other instruments necessary for the work of the Government and State surveying parties, and the usual outfit of tools, sails and oars, stationery, etc.

FIELD WORK.

The launch *Inspector* and outfit were moved to Annapolis on August 10, 1906, on which date the actual field work of the Coast and Geodetic Survey party commenced.

Previous to this time a number of signals had been erected over old Coast and Geodetic Survey triangulation stations on the Severn River by the hydrographic engineer of the Commission. By using the triangulation so established, considerable oyster bar location was accomplished.

After the arrival of the Coast Survey party, the erection of signals and the observations of horizontal angles necessary to establish a framework of triangulation were kept well ahead of the oyster bar locations and other oyster investigations.

The methods of triangulation were those established by the Coast and Geodetic Survey and require no explanation other than that given by the publications of the Survey.

In all there are 123 triangulation stations involved in the survey of Anne Arundel County natural oyster bars. These stations are scattered along the western shore line of the bay from Fort Carroll to Holland Point, and are located at intervals frequently less than a half and rarely more than a mile apart. The triangulation was carried on with energy and good judgment, but the scattered condition of the work, composed of a mixture of new and old stations, increased the number of observations without the usual proportionate increase in number of new stations established.

After the appointment of a topographic draftsman on September 19, all boat sheets for both the hydrographic and oyster investigation parties were prepared and much other drafting work was done to facilitate the operations of the commissioners. Besides this work, the draftsman checked the computations and kept up the smooth projections as far as the new field work permitted.

Considerable difficulty was experienced in bringing up the computations to the immediate requirements of the work, especially in West River and to the south along the shore of the bay, where practically all old triangulation stations had been washed away. This situation was much relieved by the appointment of a surveyman on October 15, who had received some training in the computing division of the Survey at Washington.

The operations in the vicinity of Severn and South rivers were completed September 13, when the house boat *Oyster* was moved to West River. Up to this time the party had lived on shore and suffered many of the resulting inconveniences and delays due to scattered lodgings, uncertain meal hours, etc. The advantages of the house boat were immediately shown in the results, and in spite of much bad weather the work in the vicinity of West River was completed and the *Oyster* moved to Magothy River on November 9. Here the house boat remained until the end of the month, when she was moved to Bodkin Creek. On December 9 the main body of the field work for the season was completed and the *Oyster* went to Annapolis for the winter. Quarters were taken up on shore, the parties reduced in number, and offices established in the state house.

During the following winter the unfinished ends of triangulation, construction and planting of permanent monuments, and new descriptions of stations, occupied about a third of the time of the triangulator.

Besides the training and assistance required by an entirely new organization, and the systematizing of a new class of work, the representative of the Coast and Geodetic Survey devoted much time and took much interest in the work of the Commission in general as affecting both the surveying and other operations of the oyster-culture laws of Maryland.

OFFICE WORK.

After October 15, a greater part of the original computations were made by the surveyman of the party and were checked by the triangulator and the topographic draftsman. This work included the computations of 166 triangles, 67 geodetic positions, and 1,083 back computations of geodetic positions required for the technical descriptions of the boundaries of natural oyster bars. These computations, together with the making out of the abstract of horizontal angles, the lists of geographic positions, the lists of directions, and the reduction to center for 8 eccentric stations, make up a creditable amount of computation for the short season's work.

The drafting consisted of the preparation of nearly all boat sheets used by the hydrographic and oyster-investigation parties, the construction of 9 projection sheets, and the plotting of 2,596 sextant positions on the projections. Besides this drafting, the progress map was prepared for the lithographer, the boundaries of 91 natural oyster bars were plotted on the projections, the geographic positions of 361 corners of bars were scaled off the sheets, and 1,083 distances to landmarks from corners of bars taken off the projections for use in checking computations. This work was done neatly and accurately, and represents a larger amount of labor than this statement would indicate.

The great amount of necessary work required to prepare for publication the 4 large scale charts of the natural oyster bars and the report containing the description of boundaries and landmarks to accompany charts, can be seen from an inspection of the charts and reports.

SUMMARY.

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Maryland Shell Fish Commission need no other summary than is indicated by the published charts of the natural oyster bars and the scheme of

projections and triangulation shown on the progress map at the end of this report.

The work completed will stand the test of time, and it will be recognized ultimately that both time and money have been saved by having the work done systematically and accurately.

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last sixty-five years.

Before ending this report the representative of the Coast and Geodetic Survey deems it both desirable and natural to make a statement of appreciation of the ever courteous actions of everyone connected with the Maryland Shell Fish Commission^a and of his colleague^b from the Department of Commerce and Labor. This excellent relationship made true cooperation possible and aided greatly in the successful accomplishment of much work.

^a Walter J. Mitchell, chairman, Dr. Caswell Grave, secretary, Benjamin K. Green, treasurer, commissioner; Thomas H. Robinson, counsel; Swepson Earle, hydrographic engineer; W. Gibson Emory, assistant engineer; Joseph E. Smith, local oyster commissioner for Anne Arundel County; H. Courtney Jenifer, chief clerk; Samuel A. Harper, clerk; Ernest Reppenhagen, draftsman.

^b Dr. H. F. Moore, scientific assistant in the U. S. Bureau of Fisheries.

To accompany report of work of United States
Coast and Geodetic Survey in cooperation
with the Maryland Shell Fish Commission

1906-07

• Landmarks Coast Survey Triangulation Stations
--- Water contiguous to county
--- Water within territorial limits of county
--- Limits of jurisdiction of U.S. Coast and Geodetic Survey
--- Limits of waters subject to U.S. jurisdiction

DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS
BALTIMORE COUNTY
MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND
REPORT OF WORK OF UNITED STATES COAST
AND GEODETIC SURVEY IN COOPERATION
WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND
SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE

1911

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, August 10, 1911.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, together with certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shell fish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, 1909, 1910, 1911, and 1912.

Respectfully,

O. H. TITTMANN, *Superintendent.*

To HON. CHARLES NAGEL,
Secretary of Commerce and Labor.

CERTIFICATION.

BALTIMORE, MD., *August 10, 1911.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in Baltimore County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,
Chief of Coast and Geodetic Survey Party,
Assistant, Coast and Geodetic Survey.

BALTIMORE, MD., *August 10, 1911.*

Examined and certified to be correct.

WALTER J. MITCHELL,
CASWELL GRAVE,
BENJAMIN K. GREEN,
Maryland Shell Fish Commission.
SWEPSON EARLE,
Hydrographic Engineer.

NOTE.—Certified copies of this publication and of the charts of the natural oyster bars of Baltimore County were filed in the office of the clerk of the circuit court of Baltimore County and in the office of the board of shell fish commissioners on August 10, 1911.

CONTENTS.

	Page.
PROGRESS MAP.....	follows 42
LETTER OF SUBMITTAL.....	3
CERTIFICATION.....	5
INTRODUCTION:	
Publications.....	9
Cooperation of the Coast and Geodetic Survey.....	10
Cooperation of the Bureau of Fisheries.....	10
General statement of work of Coast and Geodetic Survey.....	10
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions.....	12
Organization and equipment.....	12
Chronological statement of work.....	13
Statistics.....	14
General remarks.....	14
CHARTS AND MAPS:	
Charts of natural oyster bars.....	15
Leasing charts.....	16
Projections.....	17
Progress maps.....	17
BOUNDARIES OF THE COUNTY WATERS:	
Waters within territorial limits of county.....	18
Waters contiguous to county.....	19
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation.....	20
Method of describing triangulation stations.....	20
Descriptions of triangulation stations in county and adjacent waters—	
<i>Chart No. 27 (Chesapeake Bay between Patapsco River and Pooles Island)—</i>	
Pooles Island Light.....	23
Pooles Island 2.....	23
Worton Point 2 (<i>see Progress map</i>).....	24
Bramble (<i>see Progress map</i>).....	24
Mitchells Bluff 2 (<i>see Progress map</i>).....	25
Craighill Channel Light (Rear Range).....	25
Craighill Channel Light (Front Range).....	25
North Point (Old Tower Foundation).....	26
Fort Howard Taller Water Tank.....	26
Cutoff Channel Light (Front Range).....	26
Cutoff Channel Light (Rear Range).....	26
Rock Point.....	26
Bodkin Point (Old Tower) (<i>see Progress map</i>).....	27
Seven Foot Knoll Light.....	27
Swan Point 3 (<i>see Progress map</i>).....	27

BOUNDARIES OF OYSTER BARS:	Page
Explanation.....	28
Method of describing boundaries.....	29
Surveying methods for relocation of boundaries.....	30
Boundaries of natural oyster bars in county—	
<i>Chart No. 27 (Chesapeake Bay)—</i>	
Tea Table.....	33
Millers Island.....	34
Man O'War Shoals.....	34
APPENDICES:	
Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.....	35
Appendix B.—“The Haman Oyster Culture Law” (extract from Second Report of Shell Fish Commission).....	39
Appendix C.—Summary of the particular surveying operations which constitute an “oyster survey” as now being carried on in Maryland.....	40
Appendix D.—Statistics of results of the combined operations of the Government and State..	42

SURVEY OF OYSTER BARS, BALTIMORE COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws¹ authorizing the work and the natural division of the surveying operations² of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consists of a series of charts and a technical report for each county surveyed.³ The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal description of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey in charge of the work of that service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.⁴

The publications prepared and issued by the State under the direction of the Shell Fish Commission consist of annual reports⁵ of all the operations of the commission performed under the provisions of the laws of Maryland,⁶ including results of biological

¹ See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

² See Appendix C for a summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.

³ These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C. The publications now ready for issue are those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, St. Marys, and Baltimore Counties.

⁴ The technical records and charts for each county are published separately on account of the requirements of the oyster culture laws of the State and the practical considerations which make it desirable to have each county "opened up" for oyster culture as soon as practicable after the completion of its survey. For these reasons and the fact that these reports are each arranged for distribution and use in one county only without reference to other published records, much of the text of this publication is of necessity identical with similar previous publications for other counties.

⁵ These reports can be obtained by application to the Shell Fish Commission, Marine Bank Building, Baltimore, Md. They are issued annually in October, and the first and second reports are now available for distribution.

⁶ See Appendix B for an extract from the "Second Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman oyster-culture law."

Survey of Oyster Bars, Baltimore County, Md.

and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.¹

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential as a foundation for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.² A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL STATEMENT OF WORK OF COAST AND GEODETIC SURVEY.³

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need very little other summary than is indicated by the published "Charts of Natural Oyster Bars" and the index of hydrographic projections and triangulation stations shown on the county progress maps attached to each report.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

³ For a detail statement of the very large amount of excellent oyster-survey work of the Maryland Shell Fish Commission see the "Annual Reports of the Maryland Shell Fish Commission."

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars but also to the Government for any future work it may do in the regions covered by the oyster-survey operations.

The hydrographic projections and published charts are prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shell-fish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to and permanently fixed by published technical descriptions which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way, and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County":

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster-bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last 65 years.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY IN BALTIMORE COUNTY.

INSTRUCTIONS.

The following letters, together with the laws¹ of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the survey at Washington, have proved very beneficial to the work and are greatly appreciated:

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

His Excellency HON. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

LAWRENCE O. MURRAY, *Assistant Secretary.*

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector * * *.

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the Commissioners, prepare a program of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TYTMANN, *Superintendent.*

Capt. C. C. YATES,
U. S. C. & G. S. Steamer "Endeavor," Baltimore, Md.

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides

¹ For these laws see Appendix A.

the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the field and the preparation for publication of oyster charts and technical records in the office at Washington.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster*, the Coast and Geodetic Survey party has had the constant use of the large steam launch *Inspector* and several other boats furnished by its own service, and the occasional use of the Bureau of Fisheries launch *Canvasback*¹ and the steamer *Governor McLane*² of the State fishery force.

The greater part of the equipment of instruments for the operations of both the Government and State has been furnished by the Coast and Geodetic Survey and consists of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.

The field work of the Coast and Geodetic Survey in Baltimore County³ dates from April 14, 1909, when the Maryland Shell Fish Commission house boat *Oyster* was moved from her winter quarters in Baltimore to an anchorage off Rock Hall Landing in Kent County. The surveying operations carried on from this harbor covered a period of about six weeks, when practically all the triangulation of the Chesapeake Bay shores of both Baltimore and Kent Counties was completed.

On May 26, 1909, the *Oyster* was moved from Rock Hall Landing to near Cliffs Landing in the upper part of Chester River, and no further work was done in Baltimore County from that date to July 22, 1909, when the anchorage of the *Oyster* was changed back to Rock Hall to complete some unfinished details of the oyster survey work in that vicinity.

On August 5, 1909, the house boat was again moved, this time to Worton Creek, the extreme northern limit of oyster growth in Chesapeake Bay. From this harbor all the remaining oyster survey work of the Coast and Geodetic Survey in both Baltimore and Kent Counties was completed, although some weeks later a party of the Maryland Shell Fish Commission returned to finish certain oyster investigations and hydrographic observations in these waters.

The office work connected with the oyster survey of Baltimore County, including compilations and drafting necessary for the preparation for publication of the oyster charts and the technical records, was continued intermittently with the office work of other counties from the beginning of the field work in Baltimore County to the time of filing of the certified oyster charts and technical reports in the archives of the Commission and with the clerk of the circuit court of Baltimore County on August 10, 1911.

¹ By courtesy of Dr. H. F. Moore, United States Bureau of Fisheries.

² By courtesy of Capt. James A. Turner, commanding.

³ The field work of Baltimore and Kent Counties was so intermixed in Chesapeake Bay that the chronological statement of work for one of these counties necessarily includes a considerable part of the work of the other county.

STATISTICS.¹

Landmarks and triangulation signals erected.....	6
Monuments planted to mark triangulation stations.....	6
Triangulation stations occupied for observations of horizontal angles.....	3
Old triangulation stations recovered.....	14
New triangulation stations established.....	1
Total old and new triangulation stations marked and described.....	15
Linear miles of shore line covered by triangulation (approximate).....	12
Square miles covered by triangulation (approximate).....	50
Hydrographic projections prepared and completed as records of oyster boundaries.....	4
Triangles computed.....	8
Geographic positions computed.....	1
Corners of oyster boundaries established by computation.....	13
Back azimuths and distances computed from corners of boundaries to triangulation stations.....	39
Descriptions of triangulation stations prepared for publication.....	15
Descriptions of oyster boundaries prepared for publication.....	3
"Charts of Natural Oyster Bars" prepared for publication.....	1
Progress map prepared for publication.....	1

GENERAL REMARKS.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore, of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unfailing tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the commission, who, as editor of the commission's annual report and commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Mr. Benjamin K. Green, treasurer of the commission, who has looked after the equipment and commissary of the house boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Mr. Swepson Earle, hydrographic engineer to the commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

And to the many others connected with the commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

¹ These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of Baltimore County, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland. See Appendix D of this publication for "Statistics of results of combined operations of the Government and the State."

CHARTS AND MAPS.¹

CHARTS OF NATURAL OYSTER BARS.

The chart of the natural oyster bars of Baltimore County, published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, covers that portion of the upper Chesapeake Bay and tributaries in Baltimore County in which the waters are sufficiently salt for the growth of oysters. This chart is published on a scale of 1 part in 20,000 (approximately 3½ inches to a statute mile). It is constructed on a polyconic projection and is based on the United States standard datum of the Coast and Geodetic Survey.

This chart shows all oyster bars and other boundaries established by the commission, and is certified for the purpose of filing in the office of the clerk of the circuit court of Baltimore County and in the office of the Maryland Shell Fish Commission, as required by the oyster laws of Maryland.

In addition to the oyster bar and other boundaries, the "Maryland Oyster Charts" show the location and name of all landmarks (United States Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.²

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the heading "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of the Coast and Geodetic Survey oyster survey publication in accordance with the charts upon which they are shown. To find a particular oyster bar or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² Much of the detail of the inshore topography was obtained from the excellent map of Baltimore County, prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the U. S. Geological Survey.

indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of the publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shellfish industries. The 1-fathom contour (6 feet) and the 5-fathom curve (30 feet) correspond in a general way to the inner and outer limits of all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with each county are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart within the boundaries of the different shellfish bottoms.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Baltimore County, like those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, and St. Marys counties, have been prepared under the direction of the hydrographic engineer of the commission. These charts are constructed on polyconic projections and are based on the United States standard datum of the Coast and Geodetic Survey. They are made on the scales of 1 part in 5,000, or 1 part in 10,000, as the needs of oyster culture may require. Anne Arundel County required 13 leasing charts; Somerset County, 12 charts; Wicomico County, 2 charts; Worcester County, 3 charts; Calvert County, 5 charts; Charles County, 2 charts; St. Marys County, 8 charts; and Baltimore County, 1 chart, to cover their oyster bottoms.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small rectan-

gles of 1 acre or 5 acres, as may be best suited to the area under consideration, and prospective leaseholders by the rules of the commission are compelled to select whole rectangles as far as possible.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the commission, in the Marine Bank Building at Baltimore.

PROJECTIONS.

The polyconic projections¹ covering Baltimore County waters are four in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, but the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission were plotted by the draftsman of the commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster-bar and other boundaries established by the commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the archives of the Shell Fish Commission.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the United States Coast and Geodetic Survey in Baltimore County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress maps² accompanying the first and second annual reports of the Maryland Shell Fish Commission were prepared under the direction of the hydrographic engineer of the commission. They are on the scale of 1 part in 400,000, and show the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey.

¹ For the scheme of these projections see the progress map at the end of this publication.

² These maps and reports can be obtained by application to Maryland Shell Fish Commission, Marine Bank Building, Baltimore, Md.

BOUNDARIES OF THE COUNTY WATERS.¹

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line² between the waters "within the territorial limits" of Baltimore County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the "oyster" charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Following the boundary line in the middle of Gunpowder River between Baltimore and Harford counties to a point at the intersection of this boundary with a straight line between the northeastern end of Millers Island and the southwestern end of Sprys Island defined by latitude $39^{\circ} 16' 58.8''$ and longitude $76^{\circ} 20' 10.0''$; thence in a straight line across a part of the waters of the mouth of Gunpowder River to a point on the northeastern end of Millers Island defined by latitude $39^{\circ} 15' 51.6''$ and longitude $76^{\circ} 21' 09.0''$; thence along the mean low-water line of the Chesapeake Bay shore of Millers Island or a line across the mouth of all inlets less than 100 yards in width, as the case may be, to a point on the southwestern end of Millers Island defined by latitude $39^{\circ} 15' 19.5''$ and longitude $76^{\circ} 22' 51.0''$; thence in a straight line across the waters and small marsh islands between Millers Island and Hart Island to a point on the northeastern end of Hart Island defined by latitude $39^{\circ} 15' 08.5''$ and longitude $76^{\circ} 22' 18.0''$; thence along the mean low-water line of Chesapeake Bay shore of Hart Island or a line across the mouth of all inlets less than 100 yards in width, as the case may be, to a point on the southwestern end of Hart Island defined by latitude $39^{\circ} 13' 47.5''$ and longitude $76^{\circ} 23' 46.0''$; thence in a straight line across the waters between Hart Island and the mainland to a point on the mainland of Baltimore County defined by latitude $39^{\circ} 13' 45.5''$ and longitude $76^{\circ} 23' 56.8''$; thence along the mean low-water line of the Chesapeake Bay shore of Baltimore County or a line across the mouth of all inlets less than 100 yards in width, as the case may be, to a point on the northeastern side of the entrance to Shallow Creek defined by latitude $39^{\circ} 12' 15.3''$ and longitude $76^{\circ} 25' 57.4''$; thence in a straight line across the mouth of Shallow Creek to a point on the southwestern side of the entrance to Shallow Creek defined by latitude $39^{\circ} 12' 11.1''$ and longitude $76^{\circ} 26' 12.4''$; thence along the mean low-water line of the Chesapeake Bay shore of Baltimore County or a line across the mouth of all inlets less than 100 yards in width, as the case may be, to a point located on North Point at the extreme southern end of Baltimore County defined by latitude $39^{\circ} 11' 43.8''$ and longitude $76^{\circ} 26' 34.2''$; thence in a straight line to a point located in Chesapeake Bay about 150 yards offshore on the foundation of an old stone lighthouse tower defined by latitude $39^{\circ} 11' 39.2''$ and longitude $76^{\circ} 26' 31.4''$; thence in a straight line across a part of the waters of the mouth of Patapsco River to a point defined by the intersection of the center line of Brewerton Channel and a straight line between "North Point (Old Tower Foundation)" and a point defined by latitude $39^{\circ} 09' 59.3''$ and longitude $76^{\circ} 28' 39.7''$, situated on Rock Point; thence along the center line of Brewerton Channel to a point defined by the intersection of this line with the center line of Fort McHenry Channel; thence along the center line of Fort McHenry Channel to a point defined by the intersection of this line with the southern boundary line of Baltimore County.³

¹ For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

² See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

³ Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the United States Coast and Geodetic Survey, "which said copies shall be filed in the office of the said commissioners," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county and the waters contiguous to but not within the territorial limits of adjacent counties.

This boundary line has been delineated on the "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey and is technically described and defined as follows:

Commencing at a point situated in the mouth of the Gunpowder River at the intersection of the boundary between Baltimore and Harford counties and a straight line between the northeastern end of Millers Island and the southwestern end of Sprys Island and defined by latitude $39^{\circ} 16' 58.8''$ and longitude $76^{\circ} 20' 10.0''$; thence in a straight line across a part of Chesapeake Bay to a point situated about $1\frac{1}{16}$ miles south of the southern end of Pooles Island and defined by latitude $39^{\circ} 15' 30.0''$ and longitude $76^{\circ} 16' 20.4''$; thence in a straight line along the waters of Chesapeake Bay to a point situated about $3\frac{1}{8}$ miles east of "Seven Foot Knoll Light" and $3\frac{7}{8}$ miles southeast of "Craighill Channel Light (Front Range)" and defined by latitude $39^{\circ} 09' 10.6''$ and longitude $76^{\circ} 21' 00.0''$; thence in a straight line along the continuation of the center line of Brewerton Channel to Brewerton Channel, and thence along the center line of Brewerton Channel to a point defined by the intersection of this line and a straight line between "North Point (Old Tower Foundation)" and a point defined by latitude $39^{\circ} 09' 59.3''$ and longitude $76^{\circ} 28' 39.7''$, situated on Rock Point.¹

¹ Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION.

The oyster laws of Maryland authorizing the survey to be made by the shell fish commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of location and character of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking a landmark has only an indefinite idea of its location. They gradually proceed from description of the general locality of a landmark to the descriptions of its immediate surroundings. This is followed by specific details of the character of the center and reference marks and a "round" of reference angles and distances which in themselves frequently contain enough information to furnish an independent and reliable location of the triangulation station.

METHOD OF DESCRIBING TRIANGULATION STATIONS.

The separate descriptions of triangulation stations should not be used without reading the following explanation of the method of describing the triangulation stations, as it contains certain details that are common to all the landmarks described in this publication and which are omitted in the separate descriptions as being needless repetitions:

Name.—The title at the top of each separate description is the name by which the landmark or triangulation station is known and designated in all work and published oyster records or oyster charts of both the Government and State. The selection of the name is usually left to the triangulator establishing the station, and it may or may not have geographic or other significance in reference to the locality.

General locality.—Under this heading is given the general locality of the landmark in reference to well-known and prominent natural or artificial features, such as the nearest body of water, town, river, steamer wharf, well-defined point of land, church, or any other feature that is likely to remain both permanent and prominent.

This heading also covers a reference to the published chart or map which shows the location of the station most clearly. Nearly all the triangulation stations described in this publication are plainly indicated by name and a triangulation symbol on the published charts of oyster bars of Maryland. In this case they are referred to by serial number only, the words "charts of oyster bars of Maryland" being omitted to avoid needless repetition. These published oyster charts are on the large scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inches to a statute mile) and show the locations of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Immediate locality.—Under this heading is given the description of the "observed station" in reference to its immediate surroundings. This is supposed to include a statement of the station's estimated elevation above high water or some other well-defined level of the locality, such as a road or house; the character of the ground on which it is located, such as marsh land, sand beach, cultivated field, or meadow; estimated bearings in points of the compass and estimated distances in yards *from* (not *to*) easily recognized features, such as extreme end of point, edge of bluff, bank of creek, line of telephone poles, shore line, barn, house, fence, ditch, trees, or any other definite detail, such as being on range with the tangent of an island and a church; and so forth.

When a standard monument has been established near the station as a "reference station," this heading also covers a statement of the true bearing of the monument in degrees and minutes and its measured distance in meters, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached and might be mistaken for the center mark of the "observed station" unless special attention is called to it.

The distinction between the "observed station" and "reference station" should be carefully noted by anyone making use of the description of stations for any future surveying operations.

The "observed station" is located at the particular triangulation point covered by the description of stations, and is the one whose geographic position is first computed, as it is the point which was "occupied" and "observed on" for horizontal angles. However, in spite of the primary importance of the location of the "observed station," it will be noted from the description of stations that frequently it is not marked as well as the "reference station," and in some instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate "observed stations" on edges of banks and ends of points of land, which in the tide-water section of Maryland generally means they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the great need of "reference stations," if the frequent reestablishment of a new framework of triangulation is to be avoided.

The chief reason and need for the establishment of the "reference station," or secondary station, as it might be well named, is explained in the preceding paragraph, but in several instances other reasons, such as the location of the "observed station"

on an unstable sand dune, in a cultivated field, in front of a residence, or other places objectionable to the landowner, have led to establishment of "reference stations." The location of the "reference station" in relation to the "observed station" is fixed for plotting on charts or for computation of its geographic position by checked measurements of its distances and azimuth from the "observed station."¹

• *Marks.*—Under this heading is given a description of the character of the permanent monuments or other marks of the location of the "observed station," and of the "reference station" where one has been established.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom, the center of its square section can be used as the location of the station.

As the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

References.—Under this heading are given the "rounds" of directions and distances to all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described, this, if possible, being a lighthouse, church spire, or other permanent and prominent point. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing² of the initial object is always given in parentheses alongside its name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by horizontal angles or for the relocation of corner buoys of oyster-bar boundaries by the method of compass directions described in this publication under the heading of "Boundaries of oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles, and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner, the accuracy of the directions are indicated by the refinement of angular measure with which they are recorded.

¹ Geographic coordinates (latitude, longitude, distance, and azimuth) relating to any of the "observed stations" or of the "reference stations" described in this publication can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² The mean magnetic variation for Baltimore County was $6^{\circ} 15'$ west of north in 1911 and increasing at the rate of $5'$ yearly.

DESCRIPTIONS OF TRIANGULATION STATIONS.

POOLES ISLAND LIGHT.

General locality.—Upper Chesapeake Bay on northwest side of Pooles Island. (See Chart No. 27.)

Immediate locality.—Observed station is on a detached tower known as Pooles Island Lighthouse.

Marks.—Observed station is center point of lantern on tower.

References.—

“Craighill Channel Light (Front Range)” (S 44° 19' W). 0 00 00..... 10 miles.

POOLES ISLAND 2.

General locality.—Upper Chesapeake Bay on Pooles Island, about $\frac{1}{4}$ mile southeast of Pooles Island Light and $\frac{1}{4}$ mile north by west of Pooles Island wharf. (See Chart No. 27.)

Immediate locality.—Observed station is in a peach orchard, on highest ground on northern part of Pooles Island, about 500 yards southeast of Pooles Island Light and 370 yards north by west of farmhouse. The angle at the southwest corner of the farmhouse between the windmill at the barn and the observed station is 84°, and the angle at the observed station between the light tower and the fog-bell tower is 2° 47'.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument. (Note: These marks replace old ones of 1896.)

References.—

“Pooles Island Light” (N 47° 16' W).....	0	00	00	.....	452 meters.
Break in bluff on east shore of bay showing through peach trees.....	153	12	..	.....	33 $\frac{1}{4}$ miles.
Center of chimney of small house in rear of dwelling.....	215	00	..	.....	$\frac{1}{4}$ mile.
Center of middle one of three chimneys on dwelling.....	218	03	..	.....	$\frac{1}{4}$ mile.
Center of cupola on small building.....	220	50	..	.....	$\frac{1}{4}$ mile.
Near gable of barn.....	238	06	..	.....	$\frac{1}{4}$ mile.
Windmill.....	241	56	..	.....	$\frac{1}{4}$ mile.
Center one of four nails in apple tree.....	336	24	10	.....	33.72 meters.

WORTON POINT 2.

General locality.—Eastern shore of Chesapeake Bay on Worton Point, about $1\frac{3}{8}$ miles north of mouth of Worton Creek and $4\frac{1}{2}$ miles northeast of north end of Pooles Island. (See Progress map.)

Immediate locality.—Observed station is on tree and bush fringed bluff about 30 feet above high water, 2 yards east-southeast of edge of bluff and 1 yard south-southwest of a very small ravine. Cement monument marking reference station is 14.05 meters S $61^{\circ} 17'$ E of observed station.

Marks.—Observed station is center of 4-inch tile pipe with top 6 inches below surface of ground. Subsurface mark is center of 4-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—	°	'	"	
"Pooles Island 2" (S $62^{\circ} 18'$ W).....	0	00	00	 $4\frac{5}{8}$ miles.
Right tree on Pooles Island.....	3	17	..	 $4\frac{1}{2}$ miles.
South peak of small house.....	42	46	..	 $4\frac{1}{2}$ miles.
Left peak of house.....	74	43	..	 $4\frac{1}{2}$ miles.
Nail in blaze in ash tree ($2\frac{1}{2}$ inches diameter).....	88	42	40	 1.06 meters.
Chimney outside of right end of old house.....	94	07	..	 $3\frac{1}{2}$ miles.
Chimney near left end of roof of house with gables.....	116	04	..	 $4\frac{1}{4}$ miles.
Nail in blaze in ash tree (3 inches diameter).....	154	28	10	 4.24 meters.
REFERENCE STATION.....	236	25	00	 14.05 meters.
Nail in blaze in locust tree (5 inches diameter).....	310	44	20	 4.61 meters.

BRAMBLE.

General locality.—Eastern shore of Chesapeake Bay, about 3 miles southeast of center of Pooles Island, 3 miles north-northeast of Tolchester Beach, and $1\frac{1}{4}$ miles southwest of entrance to Fairlee Creek. (See Progress map.)

Immediate locality.—Observed station is on a tree and bush fringed bluff about 30 feet above high water, 3 yards east of edge of bluff, 3 yards west of edge of cultivated field, 35 yards southwest of trees at edge of gully, and 200 yards west of other trees. Cement monument marking reference station is 47.16 meters N $67^{\circ} 05'$ E of observed station.

Marks.—Observed station is 2-inch stub projecting 3 inches above surface of ground. Subsurface mark is beer bottle buried below base of stub. Reference station is center point of triangle on standard cement monument projecting 2 inches above surface of ground.

References.—	°	'	"	
"Craighill Channel Light (Rear Range)" (S $78^{\circ} 44'$ W).....	0	00	00	 $9\frac{3}{8}$ miles
Left tree on Pooles Island.....	37	53	..	 3 miles.
Windmill on middle of long building on Pooles Island.....	54	00	..	 $2\frac{7}{8}$ miles.
North peak of house with several gables on Pooles Island.....	55	21	..	 $2\frac{7}{8}$ miles.
"Pooles Island Light".....	57	19	00	 $3\frac{3}{8}$ miles.
REFERENCE STATION.....	168	21	00	 47.16 meters.
Cupola on barn.....	259	24	40	 1 mile.
"Craighill Channel Light (Front Range)".....	344	34	10	 $10\frac{1}{4}$ miles.
"Fort Howard Taller Water Tank".....	354	30	00	 $12\frac{1}{2}$ miles.
Left one of two smokestacks at Sparrows Point.....	359	35	..	 $14\frac{1}{2}$ miles.

MITCHELLS BLUFF 2.

General locality.—Eastern shore of Chesapeake Bay on Mitchells Bluff, just north of first break in bluff, about $\frac{5}{8}$ miles north-northeast of Tolchester Beach Wharf. (See Progress map.)

Immediate locality.—Observed station is in cultivated ground about 30 feet above high water, 13 yards southeast of edge of bluff, 50 yards northeast of point of gully where fishermen haul up gear, 70 yards south of small clump of trees, and $\frac{1}{4}$ mile northwest of a large farmhouse.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is wire in center of 2-inch tile pipe buried with top 2 inches below base of monument. (Note: Subsurface mark is either a part or replaces the original one of 1896.)

References.—

"Craighill Channel Light (Rear Range)" (N 87° 52' W).....	0	00	00	.....	8 $\frac{3}{8}$ miles.
Chimney at left end of house on opposite shore.....	57	00	..	.....	6 $\frac{1}{4}$ miles.
Chimney at left end of house on Pooles Island.....	71	11	..	.....	4 $\frac{1}{4}$ miles.
Chimney on middle of roof of building beyond trees.....	170	10	..	.....	$\frac{5}{8}$ mile.
Spindle of weather vane on middle cupola of barn.....	200	28	30	.....	$\frac{1}{4}$ mile.
Near corner of large west chimney of house.....	210	54	..	.....	$\frac{1}{4}$ mile.
West peak of barn.....	260	07	..	.....	$\frac{3}{8}$ mile.
"Seven Foot Knoll Light".....	330	18	30	.....	10 $\frac{1}{4}$ miles.
"Craighill Channel Light (Front Range)".....	341	20	40	.....	8 $\frac{1}{2}$ miles.

CRAIGHILL CHANNEL LIGHT (REAR RANGE).

General locality.—Western side of upper Chesapeake Bay, about 200 yards offshore from the southwestern end of Hart Island. (See Chart No. 27.)

Immediate locality.—Observed station is on a tall square pyramidal skeleton steel frame structure known as Craighill Channel Light (Rear Range).

Marks.—Observed station is center point of lantern on Craighill Channel Light (Rear Range).

References.—

"Craighill Channel Light (Front Range)" (S 0° 01' E).....	0	00	00		2 $\frac{3}{4}$ miles.
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CRAIGHILL CHANNEL LIGHT (FRONT RANGE).

General locality.—Western side of Chesapeake Bay, about 2 miles offshore and about 2 $\frac{3}{4}$ miles east of North Point at entrance to Patapsco River. (See Chart No. 27.)

Immediate locality.—Observed station is on dwelling on cylindrical foundation known as Craighill Channel Light (Front Range).

Marks.—Observed station is center point of lantern on Craighill Channel Light (Front Range).

References.—

"Craighill Channel Light (Rear Range)" (N 0° 01' W).....	0	00	00		2 $\frac{3}{4}$ miles.
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Survey of Oyster Bars, Baltimore County, Md.

NORTH POINT (OLD TOWER FOUNDATION).

General locality.—Northern side of entrance to Patapsco River near North Point. (See Chart No. 27.)

Immediate locality.—Observed station is on an old stone tower foundation about 150 yards offshore from North Point.

Marks.—Observed station is center point of foundation of stone tower formerly used as a light-house.

References.—

"Craighill Channel Light (Front ° ' "
Range)" (S 81° 20' E)..... 0 00 00 2½ miles.

FORT HOWARD TALLER WATER TANK.

General locality.—Northern side of entrance to Patapsco River about ½ mile north-northwest of North Point. (See Chart No. 27.)

Immediate locality.—Observed station is the taller of two steel water tanks on steel towers at Fort Howard.

Marks.—Observed station is center point of pipe attached to center of bottom of tank.

References.—None necessary.

CUTOFF CHANNEL LIGHT (FRONT RANGE).

General locality.—Northern side of entrance to Patapsco River about 125 yards offshore and ¼ mile west-northwest of North Point. (See Chart No. 27.)

Immediate locality.—Observed station is an octagonal brick tower known as Cutoff Channel Light (Front Range).

Marks.—Observed station is center point of lantern on Cutoff Channel Light (Front Range).

References.—

"Cutoff Channel Light (Rear Range)" ° ' "
(N 30° 30' W)..... 0 00 00 1½ miles.

CUTOFF CHANNEL LIGHT (REAR RANGE).

General locality.—Northeastern side of Patapsco River on western side of entrance to Jones Creek, about 1¾ miles north-northwest of North Point and 1 mile east of the town of Sparrows Point. (See Chart No. 27.)

Immediate locality.—Observed station is on a square pyramidal skeleton steel frame structure known as Cutoff Channel Light (Rear Range).

Marks.—Observed station is center point of lantern on Cutoff Channel Light (Rear Range).

References.—

Bodkin Light (Old Tower) (S 20° 12' E) 0 00 00 6 miles.

ROCK POINT.

General locality.—Southwestern shore of Patapsco River on Rock Point at southeastern side of entrance to Rock Creek and about 2½ miles southwest of North Point. (See Chart No. 27.)

Immediate locality.—Observed station is near the extreme end of point about 12 yards from sea wall, and 70 yards southeast of a small tower.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Seven Foot Knoll Light" (S 78° ° ' "
17' E)..... 0 00 00 3¾ miles.
"Bodkin Point (Old Tower)"..... 25 43 3¾ miles.
Small tower..... 194 00 70 yards.
Outer "White Rocks"..... 211 07 ¾ mile.
Water tower on opposite shore..... 291 27 2½ miles.

BODKIN POINT (OLD TOWER).

General locality.—Southern side of entrance to Bodkin Creek on Bodkin Point. (See Progress map.)

Immediate locality.—Observed station is about 15 yards east of an old stone dwelling on top of an old tower formerly used as a lighthouse.

Marks.—Observed station is center of drill hole about 2 inches in diameter and 3 inches deep in stone platform on and near center of top of tower.

References.—

"Seven Foot Knoll Light" (N 30° 0' 0" 04' E)..... 1½ miles.

SEVEN-FOOT KNOLL LIGHT.

General locality.—Western side of Chesapeake Bay off entrance to Patapsco River about 2½ miles north-northeast of Bodkin Point and ¾ miles southeast of North Point. (See Chart No. 27.)

Immediate locality.—Observed station is on an octagonal screw pile structure known as Seven-Foot Knoll Lighthouse.

Marks.—Observed station is center point of lantern on Seven-Foot Knoll Light.

References.—

"Bodkin Point (Old Tower)" (S 30° 0' 0" 03' W)..... 1½ miles.

SWAN POINT 3.

General locality.—Eastern shore of Chesapeake Bay on Swan Point about 5½ miles south-southwest of Tolchester Beach Wharf and 7 miles north of Love Point. (See Progress map.)

Immediate locality.—Observed station is on sand and marsh point about 2 feet above high water, 5 feet east of shore, 60 yards south-southwest of a fisherman's cabin, and 250 yards from the extreme end of Swan Point. Cement monument marking old reference station is in marsh 21.43 meters N 89° 13' E of observed station. Standard cement monument marking new reference station is on line to old reference station 13.26 meters N 89° 13' E of observed station.

Marks.—Observed station is ¼-inch copper rod set in an 8-inch square cement monument with top about 5 inches below surface of ground. Subsurface mark is the neck of a flask set in cement about 4 feet below the surface. New reference station is center point of triangle on standard cement monument. Old reference station is eastern one of two ¼-inch copper rods in an 8-inch cement monument.

References.—

"Love Point Light" (S 2° 11' W)...	0	00	00	.....	5¾ miles.
"Baltimore Light".....	46	07	00	.....	8½ miles.
Stack on garbage plant at Bodkin Point.....	82	21	..	.....	8¾ miles.
"Seven-Foot Knoll Light".....	95	04	50	.....	7 miles.
Left stack at Sparrows Point.....	111	12	..	.....	12¾ miles.
"Fort Howard Teller Water Tank".....	112	28	20	.....	9¾ miles.
"Craighill Channel Light (Front Range)".....	114	59	50	.....	7 miles.
"Craighill Channel Light (Rear Range)".....	131	46	20	.....	8¾ miles.
Chimney of cabin.....	203	54	..	.....	58 yards.
Gable of Rockhall Wharf house.....	264	07	..	.....	1 mile.
OLD REFERENCE STATION.....	267	02	20	.....	21.43 meters.
NEW REFERENCE STATION					
(STANDARD CEMENT MONUMENT). 267	02	20	.....	13.26 meters.	
Chimney of house to right of Windmill Point.....	292	12	..	.....	2 miles.
Gable of barn.....	303	49	..	.....	2½ miles.
Gable of barn near Wickes Beach...	340	52	..	.....	7¾ miles.

BOUNDARIES OF OYSTER BARS.

EXPLANATION.

The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the designation and employment by the Department of Commerce and Labor of such officers, experts, and other technically qualified persons "as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland." The oyster laws of Maryland provide that the Maryland Shell Fish Commissioners, with the aid of such persons as may be designated by the Government, shall proceed "to have laid out, surveyed, and designated on the said charts the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts." The oyster laws of Maryland also provide in another section that there shall "be made a true and accurate survey of the natural oyster beds, bars, and rocks * * * with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey."

Under the provisions of the laws quoted above the State of Maryland, in cooperation with the Department of Commerce and Labor, must define the boundaries of the natural oyster bars "as accurately as practicable" and also "with reference to fixed and permanent objects on the shore, giving courses and distances." The requirement of "as accurately as practicable" is easily fulfilled by definition of the location of the corners of the oyster bars by latitude and longitude. In fact, this method is probably the most satisfactory and accurate one that could be used for all purposes of legal definition or for relocation of the oyster-bar boundaries by competent engineers. Therefore the additional requirement of "giving courses and distances" is superfluous and is only fulfilled in the published definitions on account of the specific provisions of the law making it compulsory. This part of the description of boundaries has involved an immense amount of extra computations in order to prevent technical discrepancies between the latitude and longitude of a corner of an oyster bar and its distance and bearing from objects on shore of known latitude and longitude without adding anything to the accuracy and very little to the convenience of practical use of the descriptions of the oyster-bar boundaries.

As provided by law the boundaries of the oyster bars are all straight lines, but in the work already completed they have inclosed areas of all shapes from triangles to

complicated 14-sided figures, and of all sizes from 4 acres to 7,548 acres. The sides have varied in length from 93 to 7,529 yards, and in some cases the corners of the boundaries have been practically at the triangulation stations from which they are located, while in other instances they were over 13,600 yards from the landmarks most available for the purpose of fixing their position.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made and the magnitude of the work with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and great importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and the future.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in each county.

Title.—At the top of each tabular form is given the legal name of the oyster bar to be described, and the one by which it is known and designated in the published oyster records and on the oyster charts. The adopted name of the oyster bar is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the commission; and when there was no local name in common use a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the oyster bar was located.

Underneath the name, in parentheses, is given the general locality of the oyster bar and the serial number of the "Maryland Oyster Chart" on which its legal boundaries are shown.¹

First column.—This column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar. Where a corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars, only the number of the corner of the oyster bar being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the commission as the primary technical definition of the location of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

Survey, and the points thus defined can be relocated from distant triangulation stations of the survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"¹ and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"² gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars: one, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

(1) *Triangulation.*—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those

¹ The mean magnetic variation for Baltimore County was 6° 15' west of north in 1911 and increasing at the rate of 5' yearly.

² Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant, the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "Tea Table" oyster bar, which is the first one described in this publication, and assume that "Corner No. 3," is to be examined as to its position. The angle between the two landmarks "Pooles Island 2" and "Craighill Channel Light (rear range)" as determined from right to left from the forward bearings from this corner is $122^{\circ} 06'$ and the angle between "Craighill Channel Light (rear range)" and "Swan Point 3" is $86^{\circ} 06'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree, the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor (position finder), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The second angle is then placed

on the sextant and the same operation gone through, and so on, first using one angle on the sextant, then the other, until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic location of a point is attained. In fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State fishery force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer can take compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,¹ and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks for which the bearings are published have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used. This can be done by getting their bearings directly from the chart by parallel rulers or a protractor and then applying these new bearings in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fifth column of the tables opposite the "corner" in question. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

¹ The mean magnetic variation for Baltimore County is 6° 15' west of north in 1911 and increasing at the rate of 5' yearly.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

TEA TABLE.

(Chesapeake Bay—Chart No. 27.)

Corner of bar	Latitude	Longitude	True bearing		Distance	United States Coast and Geodetic Survey triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 11 15.97	76 20 55.05	N 40 59 W	S 41 00 E	6,635	Craighill Channel Light (Rear Range).
			N 88 40 W	S 88 41 E	4,353	Craighill Channel Light (Front Range).
			S 55 33 W	N 55 30 E	6,948	Seven Foot Knoll Light.
2	39 13 44.98	76 18 37.80	N 32 17 E	S 32 18 W	8,413	Pooles Island 2.
			S 89 54 W	N 89 51 E	7,951	Craighill Channel Light (Rear Range).
			S 58 15 W	N 58 12 E	9,351	Craighill Channel Light (Front Range).
3	39 14 27.97	76 17 21.27	N 23 43 E	S 23 44 W	6,184	Pooles Island 2.
			S 81 37 W	N 81 33 E	10,065	Craighill Channel Light (Rear Range).
			S 4 29 E	N 4 29 W	11,999	Swan Point 3.
4	39 14 19.47	76 17 12.25	N 20 44 E	S 20 45 W	6,360	Pooles Island 2.
			S 83 26 W	N 83 20 E	10,261	Craighill Channel Light (Rear Range).
			S 3 26 E	N 3 26 W	11,697	Swan Point 3.
5	39 11 37.54	76 19 11.77	N 58 42 W	S 58 44 E	8,263	Craighill Channel Light (Rear Range).
			S 61 08 W	N 61 04 E	9,640	Seven Foot Knoll Light.
			S 31 43 E	N 31 41 W	7,304	Swan Point 3.

Survey of Oyster Bars, Baltimore County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MILLERS ISLAND.

(Chesapeake Bay—Chart No. 27.)

Corner of bar	Latitude	Longitude	True bearing		Distance	United States Coast and Geodetic Survey triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 12 42.80	76 20 54.83	N 64 28 W	S 64 30 E	4,827	Craighill Channel Light (Rear Range).
			S 57 02 W	N 57 00 E	5,194	Craighill Channel Light (Front Range).
			S 37 53 E	N 37 50 W	10,660	Swan Point 3.
2	39 12 57.17	76 21 00.00	N 69 16 W	S 69 18 E	4,512	Craighill Channel Light (Rear Range).
			S 51 54 W	N 51 52 E	5,364	Craighill Channel Light (Front Range).
			S 36 54 E	N 36 52 W	11,127	Swan Point 3.
3	39 13 08.45	76 20 11.73	N 77 30 W	S 77 32 E	5,620	Craighill Channel Light (Rear Range).
			S 56 05 W	N 56 02 E	6,615	Craighill Channel Light (Front Range).
			S 30 16 E	N 30 14 W	10,742	Swan Point 3.
4	39 12 54.00	76 20 05.95	N 73 11 W	S 73 13 E	5,890	Craighill Channel Light (Rear Range).
			S 60 24 W	N 60 22 E	6,486	Craighill Channel Light (Front Range).
			S 30 54 E	N 30 53 W	10,246	Swan Point 3.

MAN O'WAR SHOALS.

(Chesapeake Bay—Chart No. 27.)

1	39 10 45.95	76 21 00.00	N 35 01 W	S 35 03 E	7,355	Craighill Channel Light (Rear Range).
			S 62 28 W	N 62 27 E	6,313	Seven Foot Knoll Light.
			S 56 12 E	N 56 10 W	8,040	Swan Point 3.
2	39 10 49.50	76 23 40.30	N 0 09 W	S 0 09 E	5,901	Craighill Channel Light (Rear Range).
			N 61 47 W	S 61 49 E	5,673	Fort Howard Taller Water Tank.
			S 24 35 W	N 24 35 E	3,341	Seven Foot Knoll Light.
3	39 11 16.18	76 23 40.00	N 0 16 W	S 0 16 E	5,000	Craighill Channel Light (Rear Range).
			N 70 24 W	S 70 26 E	5,315	Fort Howard Taller Water Tank.
			S 19 33 W	N 19 32 E	4,179	Seven Foot Knoll Light.
4	39 11 16.20	76 21 37.65	N 32 53 W	S 32 54 E	5,956	Craighill Channel Light (Rear Range).
			N 88 20 W	S 88 21 E	3,234	Craighill Channel Light (Front Range).
			S 49 30 W	N 49 28 E	6,064	Seven Foot Knoll Light.

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May

Survey of Oyster Bars, Baltimore County, Md.

twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven * * *.

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars * * *.

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved March 4, 1909.]

AN ACT Making appropriation for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and ten, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and ten, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved June 25, 1910.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eleven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eleven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, fifteen thousand dollars.

Survey of Oyster Bars, Baltimore County, Md.

37

[Act of Congress approved March 4, 1911.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and twelve, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and twelve, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, thirteen thousand dollars * * *.

[Act of the Legislature of Maryland approved April 2, 1906.]

AN ACT To establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That the following sections be, and they are hereby, added to article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis, and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie * * *.

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section.

* * * * *
SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the said to the Clerks of the Circuit court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks shall be construed in all the courts of the State to be barren bottoms and open for disposal by the State for the purpose of private planting or propagation of oysters thereon

under the provisions of this Act; provided, that the said survey and report shall not be construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act.

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the survey, is as follows:

AN ACT Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or leveling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.¹ *And be it enacted,* That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses (to be by them sworn or affirmed and examined), shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted,* That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

¹ Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from Second Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman oyster culture law, upon the statute books of Maryland, had a twofold object in view:

"1. To encourage an industry in oyster culture upon the barren bottoms beneath the tidewaters of the State.

"2. To prevent the leasing of natural oyster bars for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

DEFINITION OF A NATURAL OYSTER BAR.

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman oyster culture law to exercise its judgment liberally in favor of the natural bars when surveying, charting, and buoying them, but other than this the commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the commission."

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally, even though now practically barren of oysters, should be considered natural bars. Other citizens of the State, who are not directly interested in the oyster business but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which by methods known to oyster culturists may be made to yield a greater number of oysters than they now produce.

"It should be evident to everyone that neither of these definitions could be adopted by the commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

The definition of a natural oyster bar which very nearly approaches a reasonable and satisfactory compromise between the views of the subject held by oystermen on one hand and by oyster culturists on the other is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Todd *v.* Job T. Moore.

This definition has been adopted by the Shell Fish Commission as the basis for the determination of the status of the various oyster bottoms surveyed, and is as follows:

What, then, is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible; but if so, I imagine that their extent must be too limited for them to be of much practical general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them, and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be

called natural bars or beds of oysters within the meaning of the act of assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and can not be located or appropriated by any individual.

APPLICATION OF DEFINITION.

Before this definition may be of use in determining accurately and scientifically the status of an oyster ground, its central idea, "livelihood," must be expanded into accurately determinable factors, and these factors must be combined into a practical scheme of investigating the condition of the ground under consideration.

Stated briefly, a livelihood is represented by a sum of money obtained from the sale, at a fixed price, of a certain quantity of oysters gathered in a given time from an allotted area of ground.

Knowing the value of each of these factors, it becomes possible to calculate the number of oysters an oyster ground must produce per square yard in order that oystermen may secure a livelihood by working upon it.

NOTE.—The factors into which the commission resolved the livelihood problem, the value assigned to each factor, and the scheme devised for practical use in examining and applying the definition to oyster bottoms are given in outline in their second report under the heading of the preceding extract, and in detail in their first report on pages 32 to 69.

APPENDIX C.—SUMMARY OF THE PARTICULAR SURVEYING OPERATIONS WHICH CONSTITUTE AN "OYSTER SURVEY" AS NOW BEING CARRIED ON IN MARYLAND.

Explanation.—A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland, will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest practical accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Triangulation survey.—Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a framework or foundation. Therefore, a triangulation survey, including the permanent marking of the positions of landmarks with monuments, and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

Topographic survey.—The technical records which establish the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the leaseable bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore a topographic survey is a necessary operation of a complete oyster survey.

Hydrographic survey.—In the settlement of the important question of what is or what is not a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore a hydrographic survey is a necessary operation of a complete oyster survey.

Necessary foundation for an oyster survey.—Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Special surveys and investigations pertaining to oysters.—Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations¹ making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding-boat party in addition to the usual hydrographic work.² This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

The special oyster investigations³ consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

Preparation of results.—The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.⁴ This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for publication by the Government, the preparation of that part of the annual report of the commission covering the special oyster surveys and investigations, the making of the leasing charts and finished projections, and finally the filing of the oyster charts and records with the courts and the commission, thus opening a county for oyster culture.

Summary.—From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² See pp. 104 to 123 of "First Annual Report of Maryland Shell Fish Commission."

³ See pp. 30 to 67 and 129 to 199 of "First Annual Report of Maryland Shell Fish Commission."

⁴ No mention is made here of the large amount of administrative work of the commission, which is greatly complicated and increased by the effect of the oyster-survey operations on many thousands of people whose interests are more or less involved; or of the large amount of survey work involved in the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

Survey of Oyster Bars, Baltimore County, Md.

APPENDIX D.—STATISTICS OF RESULTS OF THE COMBINED OYSTER SURVEY OPERATIONS OF THE GOVERNMENT AND STATE.¹

Operations	Anne Arundel County	Somerset County	Wicomico County	Worcester County	Calvert County	Charles County	St. Marys County	Baltimore County	Total
Beginning of field work.....	June 29, 1906	May 1, 1907	Aug. 27, 1907	Nov. 8, 1907	May 3, 1908	Aug. 18, 1908	May 2, 1908	Apr. 14, 1909	.....
Filing of certified charts and reports.....	June 20, 1907	July 1, 1907	Dec. 1, 1907	Apr. 12, 1908	Dec. 14, 1907	June 27, 1911	July 6, 1911	Aug. 10, 1911	.....
Natural oyster bars surveyed and delineated.....	91	37	145	8	15	15	15	15	.....
Acres of natural oyster bars.....	33,060	27,506	2,038	1,455	12,403	2,553	25,728	3,010	128,354
Arms of bays surveyed and delineated.....	54	32,168	.....	.....	.....	.....	.....	.....	54
Arms of bays.....	.....	.....	.....	.....	.....	.....	.....	.....	32,168
Clam beds surveyed and delineated.....	.....	506	.....	.....	.....	.....	.....	.....	3
Acres of clam beds.....	362	154	53	108	149	51	113	11	506
Boundary buoys located and planted.....	123	80	30	48	78	42	248	15	1,455
Triangulation landmarks established.....	110	125	40	95	95	32	100	12	599
Miles of water covered by triangulation.....	230	375	44	110	157	50	180	50	1,062
Square miles of water covered by triangulation.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Miles of examination of shell bottom with chain apparatus.....	369	290	58	63	250	113	400	33	1,407
Oyster investigation stations occupied.....	440	679	102	147	667	113	1,422	0	3,742
Number of stations occupied.....	4	3	1	1	2	1	7	1	20
Number of miles covered by shell bottoms.....	37,049	17,904	3,377	3,049	11,292	1,631	19,344	1,080	95,436
Square miles covered by soundings and chain apparatus.....	58	47	3	3	30	4	37	6	198
Projections prepared and plotted.....	9	13	2	3	8	4	15	4	44
Leasing charts prepared.....	4	12	2	3	5	2	10	1	27
Charts published.....	4	6	2	3	5	1	8	1	27
Reports published.....	2	2	2	2	2	2	2	2	10
Progress maps published.....	2	2	2	2	2	2	2	2	10

¹ These statistics do not include the large amount of triangulation, topography, and hydrography resulting from previous work of the Coast and Geodetic Survey, which was utilized in the preparation of the published charts and soundings. Work in Kent, Queen Annes, Talbot, and Dorchester Counties has been finished, but final statistics of results will not be published until these counties are opened for oyster culture.

² Less quantities covered by statistics of more than one county.

³ Total area of natural oyster bars of Connecticut, 5,770 acres.

BALTIMORE

Scale 1:100,000

Statute Miles

Nautical Miles

Kilometers

Middle River

CHART No. 27

Worton Point 2

Projection B

Projection C

Races Island Light
Antles Island 2HARFORD COUNTY
BALTIMORE COUNTYHARFORD COUNTY
BALTIMORE COUNTYBALTIMORE COUNTY
EAST COAST

Projection D

COAST AND GEODETIC SURVEY

PROGRESS MAP

BALTIMORE COUNTY

MARYLAND

To accompany report of work of United States
Coast and Geodetic Survey in cooperation with
the Maryland Shell Fish Commission.

○ Landmarks (Coast Survey Triangulation Stations)

--- Waters contiguous to county

--- Waters within territorial limits of county

--- Limits of projections on file at Washington

--- Limits of charts published by Coast and Geodetic Survey

Cutoff Channel Light
(Rear Range)Cutoff Channel Light
(Front Range)

Port Howard Toller Water Tank

North Point (Old Tower Foundation)

Craighill Channel Light
(Front Range)

Rock Point

Seven Foot Knoll Light

Bookin Point (Old Tower)

Oatcliffe Muff 2

Franklin

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

CALVERT COUNTY

MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND REPORT
OF WORK OF UNITED STATES COAST AND GEODETIC SUR-
VEY IN COOPERATION WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON

GOVERNMENT PRINTING OFFICE

1910

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, December 21, 1909.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, and certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shell fish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, 1909, and 1910.

Respectfully,

O. H. TITTMANN, *Superintendent.*

To Hon. CHARLES NAGEL,
Secretary of Commerce and Labor.

CERTIFICATION.

BALTIMORE, MD., *December 10, 1909.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in Calvert County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,

*Chief of Coast and Geodetic Survey Party,
Assistant, Coast and Geodetic Survey.*

BALTIMORE, MD., *December 10, 1909.*

Examined and certified to be correct.

WALTER J. MITCHELL,

CASWELL GRAVE,

BENJAMIN K. GREEN,

Maryland Shell Fish Commission.

SWEFSON EARLE,

Hydrographic Engineer.

NOTE.—Certified copies of this publication and of the charts of the natural oyster bars of Calvert County were filed in the office of the clerk of the circuit court of Calvert County and in the office of the Board of Shell Fish Commissioners, at Annapolis, on December 14, 1909.

CONTENTS.

	Page.
PROGRESS MAP..... follows	94
LETTER OF SUBMITTAL.....	3
CERTIFICATION.....	5
INTRODUCTION:	
Publications.....	11
Cooperation of the Coast and Geodetic Survey.....	12
Cooperation of the Bureau of Fisheries.....	12
General statement of work of Coast and Geodetic Survey.....	12
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions.....	14
Organization and equipment.....	15
Chronological statement of work.....	15
Statistics.....	16
General remarks.....	16
CHARTS AND MAPS:	
Charts of natural oyster bars.....	18
Leasing charts.....	19
Projections.....	20
Progress maps.....	20
BOUNDARIES OF THE COUNTY WATERS:	
Waters within territorial limits of county.....	21
Waters contiguous to county.....	21
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation.....	23
Method of describing triangulation stations.....	23
Descriptions of triangulation stations—	
<i>Chart No. 16 (Chesapeake Bay)—</i>	
Holland.....	26
Hog Point (Holland 3).....	26
Beach.....	27
Ill 2.....	27
Plum 3.....	28
Pier (see also Chart No. 17).....	28
Sharps Island Light.....	29
<i>Chart No. 17 (Chesapeake Bay)—</i>	
Pier (see also Chart No. 16).....	28
Pen.....	29
Patch.....	29
Parker.....	30
Run (see also Chart No. 18).....	30
<i>Chart No. 18 (Chesapeake Bay)—</i>	
Run (see also Chart No. 17).....	30

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations—Continued.

Chart No. 18 (Chesapeake Bay)—Continued.

	Page.
Poplar	30
Flag Pond	31
Wilson 2	31
Point of Rocks	31
Cove Point Light (see also Chart No. 20)	32
White House (N. E. chimney) (see also Chart No. 20)	32
Travers 2	32

Chart No. 19 (Upper Patuxent River)—

Prince	33
Leitch	33
Fodder	34
Buena	34
Teague	35
City	35
Hallowing	36
Indian	36
Dwarf	37
Sothoron	37
Buzz	38
Billiard	38
Morsel	39
Trent	39
Collins	39
Sheridan	40
Cremona	40
Kitt	41
Oppkit	41
Battle	42
Photo	42
Fight	42
Slim	43
Forr	43
Sweep	44
Island	44
Peak	45
Cole	45
Hutchins	46
Wheat (see also Chart No. 20)	46
Mackall (see also Chart No. 20)	46
Sollers (see also Chart No. 20)	47
Bars	47
Lend (see also Chart No. 20)	48

Chart No. 20 (Lower Patuxent River)—

Wheat (see also Chart No. 19)	46
Mackall (see also Chart No. 19)	46
Sollers (see also Chart No. 19)	47
Lend (see also Chart No. 19)	48
Stock	48
Stump	48
Briscoe	49
Hellen	49
Nat	50

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.
 Descriptions of triangulation stations—Continued.

Chart No. 20 (Lower Patuxent River)—Continued.

	Page.
Ton.....	50
Mill.....	51
Bur.....	51
New.....	51
Catholic Church Cross.....	52
Cable.....	52
Town.....	52
Crane.....	53
M. E. Church (Solomons).....	53
K. of P. Flagstaff (Solomons).....	53
Sand.....	54
Fishstack.....	54
Bon.....	54
Bareda House Cupola.....	55
Drum Point Light.....	55
Ben.....	55
Craddock.....	56
Carroll 2.....	56
Hog 2.....	57
Pat.....	57
White House (N. E. chimney) (see also Chart No. 18).....	32
Cove Point Light (see also Chart No. 18).....	32
Cedar Point Light.....	57
Cain.....	58
Desert.....	58

BOUNDARIES OF OYSTER BARS:

Explanation.....	59
Method of describing boundaries.....	60
Surveying methods for relocation of boundaries.....	61

Boundaries of natural oyster bars—

Chart No. 16 (Chesapeake Bay)—

Hog Point.....	64
Upper Steps.....	65
Lower Steps.....	65
Plum Point (see also Chart No. 17).....	66

Chart No. 17 (Chesapeake Bay)—

Plum Point (see also Chart No. 16).....	66
Daddie Dare.....	66
Governors Run (see also Chart No. 18).....	67
Emanuel (see also Chart No. 18).....	67

Chart No. 18 (Chesapeake Bay)—

Governors Run (see also Chart No. 17).....	67
Emanuel (see also Chart No. 17).....	67
Flag Pond.....	68

Chart No. 19 (Upper Patuxent River)—

Spout.....	69
Holland Point (Calvert County).....	69
Buzzard Island.....	70
Macks Hollow.....	70
Broad Neck (Calvert County).....	71
Thomas (Calvert County).....	71
Kitts Marsh.....	71

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars—Continued.

Chart No. 19 (Upper Patuxent River)—Continued.

	Page.
Prison Point	72
Jacks Marsh	72
Jacks Bay	73
Parkers Wharf	73
Broome Island	74
Island Creek	74
Peterson (Calvert County) (see also Chart No. 20)	75
Mears (Calvert County) (see also Chart No. 20)	75

Chart No. 20 (Lower Patuxent River)—

Peterson (Calvert County) (see also Chart No. 19)	75
Mears (Calvert County) (see also Chart No. 19)	75
Hellen	76
Hungerford Hollow	76
Barn Gates	77
Back of Island	78
Shell Pile	78
Cherry Tree	79
Swash	80
Sandy Point Lumps	80
Southeast Middle-ground	81
Light House Lump	82
Old Lump	82
Carroll Muds (Calvert County)	82
Simmons	83
Chinese Muds (Calvert County)	83
Parker Moore	84
Under The Cliffs	84
Little Cove Point	85
Cove Point Bight	85

APPENDIXES:

Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission	87
Appendix B.—“The Haman Oyster Culture Law” (extract from Second Report of Shell Fish Commission)	90
Appendix C.—Summary of the particular surveying operations which constitute an “oyster survey” as now being carried on in Maryland	92
Appendix D.—Statistics of results of the combined operations of the Government and State	94

SURVEY OF OYSTER BARS, CALVERT COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws ^a authorizing the work and the natural division of the surveying operations ^b of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.^c The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster-bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey in charge of the work of that Service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.^d

The publications prepared and issued by the State under the direction of the Shell Fish Commission consist of annual reports ^e of all the operations of the Commission

^a See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

^b See Appendix C for a summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.

^c These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C. The publications ready for issue are those for Anne Arundel, Somerset, Wicomico, Worcester, and Calvert counties; those for St. Marys and Charles counties are now being prepared.

^d The technical records and charts for each county are published separately on account of the requirements of the oyster-culture laws of the State and the practical considerations which make it desirable to have each county "opened up" for oyster culture as soon as practicable after the completion of its survey. For these reasons and the fact that these reports are each arranged for distribution and use in one county only without reference to other published records, much of the text of this publication is of necessity identical with similar previous publications for other counties.

^e These reports can be obtained by application to the Shell Fish Commission, Annapolis, Md. They are issued annually in October, and the first and second reports are now available for distribution.

performed under the provisions of the laws of Maryland," including results of biological and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.^b

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the Service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential as a foundation for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.^c A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the Bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL STATEMENT OF WORK OF COAST AND GEODETIC SURVEY.^d

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need very

^a See Appendix B for an extract from the "Second Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman Oyster Culture Law."

^b See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

^c Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

^d For a detail statement of the very large amount of excellent oyster survey work of the Maryland Shell Fish Commission see the "Annual Reports of the Maryland Shell Fish Commission."

little other summary than is indicated by the published "Charts of Natural Oyster Bars" and the scheme of hydrographic projections and triangulation stations shown on the county progress maps attached to each report.

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster-survey operations.

The boundaries of the various shellfish bottoms in relation to landmarks and the adjacent topography have been shown with all the accuracy permitted by the large-scale oyster charts published especially for that purpose.

The technical and legal descriptions of the boundaries and the description of the location of landmarks have been prepared and published in such a manner as to minimize the probability of future disputes in reference to their location.

Stated another way and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County:"

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last sixty-five years.

In fact, when the survey of the oyster bars of Maryland is completed, it is believed that it will stand the test of time and practical use as a working foundation for whatever form the oyster legislation of the future may assume, and that the doing of the work systematically and accurately, once for all, will lead finally to the development of a great natural food resource in the form of real oyster culture which will bring ample reward for all expenditures of the "oyster survey."

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY IN CALVERT COUNTY.

INSTRUCTIONS.

The following two letters, together with the laws ^a of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the Survey at Washington, have proved very beneficial to the work, and are greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,

Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His Excellency Hon. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the commissioners, prepare a programme of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,
U. S. C. and G. S. Steamer Endeavor, Baltimore, Md.

^a For these laws see Appendix A.

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the field and the preparation for publication of oyster charts and technical records in the Office at Washington.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster* the Coast and Geodetic Survey party has had the constant use of the large steam launch *Inspector* and several other boats furnished by their own Service, and the occasional use of the Bureau of Fisheries launch *Canvasback*^a and the steamer *Governor McLane*^b of the State fishery force.

The greater part of the equipment of instruments for the operations of both the Government and State have been furnished by the Coast and Geodetic Survey and consist of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.

The field work of the Coast and Geodetic Survey in Calvert County^c dates from May 2, 1908, when the house boat *Oyster* left Baltimore for an anchorage in the Patuxent River, inside of Solomons Island. She remained in this harbor for three months, it practically being the only suitable anchorage for the work for the entire Chesapeake Bay shore of Calvert County, as well as for the lower Patuxent River. During this period there was a great amount of windy weather and consequent rough seas, which prevented work in the open bay, and in general the triangulation foundation for the oyster survey made very slow progress.

On August 4, 1908, the part of the work necessarily done from the mouth of the Patuxent River was completed, and the *Oyster* was moved about 7 miles up the river to St. Leonards Creek.

On August 18, 1908, the headquarters for the field work was again changed by moving the house boat *Oyster* 8 miles still farther up the river to an anchorage in Battle Creek, where she remained until the completion of that part of the field work which naturally included all the Patuxent River work of Charles and St. Marys counties as well as that of Calvert County, although the results are published separately.

On September 3, 1908, the house boat finally left the Patuxent River for a new anchorage in a tributary of the Potomac River, and the field work of Calvert County

^a By courtesy of Dr. H. F. Moore, U. S. Bureau of Fisheries.

^b By courtesy of Capt. James A. Turner, commanding.

^c The field work of Calvert, Charles, and St. Marys counties was so intermixed in the Patuxent River that the chronological statement of work for any one of these counties necessarily includes a considerable part of the work of the other two counties.

was dropped from that date until July 27, 1909, when it was again taken up for a period of four days to add a few details of the triangulation required for the descriptions of stations.

On December 2, 1909, it was again found necessary to obtain further triangulation details for the publication of the technical report for Calvert County, and field work was carried on for that purpose from that date to December 8, 1909.

The office work connected with the "oyster survey" of Calvert County, including computations and drafting necessary for the preparation of oyster charts and technical records for publications, was continued intermittently with the office work of other counties surveyed during same season from the beginning of field work of Calvert County to the time of the filing of the certified oyster charts and reports in the archives of the Commission and with the clerk of the circuit court of Calvert County on December 14, 1909.

STATISTICS.^a

Landmarks and triangulation signals erected.....	69
Monuments planted to mark triangulation stations.....	67
Triangulation stations occupied for observations of horizontal angles.....	52
Old triangulation stations recovered.....	20
New triangulation stations established.....	58
Total old and new triangulation stations marked and described.....	78
Linear miles of shore line covered by triangulation (approximate).....	95
Square miles covered by triangulation (approximate).....	157
Hydrographic projections prepared and completed as records of oyster boundaries.....	8
Triangles computed.....	152
Geographic positions computed.....	59
Corners of oyster boundaries established by computation.....	205
Back azimuths and distances computed from corners of boundaries to triangulation stations.....	615
Descriptions of triangulation stations prepared for publication.....	78
Descriptions of oyster boundaries prepared for publication.....	41
"Charts of Natural Oyster Bars" prepared for publication.....	5
Progress map prepared for publication.....	1

GENERAL REMARKS.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

^a These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of Calvert County, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland. See Appendix D of this publication for "Statistics of results of combined operations of the Government and the State."

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unfailing tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the Commission, who, as editor of the Commission's annual report and Commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Mr. Benjamin K. Green, treasurer of the Commission, who has looked after the equipment and commissary of the house boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Mr. Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

To Mr. Thomas H. Robinson, counsel to the Commission, for courteously furnishing valuable information relating to county boundaries.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts ^a of the natural oyster bars of Calvert County, published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, consist of five sheets covering a portion of the waters of Chesapeake Bay and all of Patuxent River, including all oyster-producing bottoms of Calvert County. They are published on a scale of 1 part in 20,000 (approximately 3½ inches to a statute mile) and are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the circuit court of Calvert County and in the office of the Commission at Annapolis, as required by the oyster laws of Maryland.

In addition to the oyster-bar and other boundaries, the charts show the location and name of all landmarks (U. S. Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography ^b necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the heading "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a particular oyster bar or landmark which is only known by name, consult the "Contents" and

^a These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

^b Much of the detail of the inshore topography was obtained from the excellent map of Calvert County prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the U. S. Geological Survey.

the desired chart and general location will be indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shellfish industries. The 1-fathom contour (6 feet) and the 5-fathom curve (30 feet) correspond in a general way to the inner and outer limits of all the oyster bars surveyed. The 3-fathom contour (18-feet) furnishes the curve of about the average depth of water on the oyster bars and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with Calvert County are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart within the boundaries of the different shellfish bottoms.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Calvert County, like those for Anne Arundel, Somerset, Wicomico, and Worcester counties, have been prepared under the direction of the hydrographic engineer of the Commission. These charts are constructed on polyconic projections and are based on the United States standard datum of the Coast and Geodetic Survey. They are made on the scales of 1 part in 5,000 or 1 part in 10,000, as the needs of oyster culture may require. Anne Arundel County required 13 leasing charts; Somerset County, 12 charts; Wicomico County, 2 charts; Worcester County, 3 charts; and Calvert County 5 charts, to cover their oyster bottoms.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to the area under consideration,

and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as practicable.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in Annapolis.

PROJECTIONS.

The polyconic projections ^a covering Calvert County waters are 8 in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, but the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission were plotted by the draftsman of the Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster-bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the office of the Shell Fish Commission, at Annapolis.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the U. S. Coast and Geodetic Survey in Calvert County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress maps ^b accompanying the first and second annual reports of the Maryland Shell Fish Commission were prepared under the direction of the hydrographic engineer of the Commission. They are on the scale of 1 part in 400,000, and show the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey.

^a For the scheme of these projections see the progress map at the end of this publication.

^b These maps and reports can be obtained by application to Maryland Shell Fish Commission, Annapolis, Md.

BOUNDARIES OF THE COUNTY WATERS.^a

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line ^b between the waters "within the territorial limits" of Calvert County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Commencing at a point defined by the intersection of the mean low-water line of the western shore of Chesapeake Bay in the vicinity of Hog Point and the boundary line between Anne Arundel and Calvert counties; thence along the mean low-water line of the Chesapeake Bay shore of Calvert County across the mouth of all inlets less than 100 yards in width, around Plum Point and Cove Point, to a point defined by latitude $38^{\circ} 19' 09''.8$ and longitude $76^{\circ} 25' 21''.0$ situated on Drum Point on the northern side of the entrance to Patuxent River; thence along a straight line ending at a point defined by latitude $38^{\circ} 18' 35''.9$ and longitude $76^{\circ} 23' 59''.8$ situated on Hog Point on the southern side of the entrance to Patuxent River, to a point defined by the intersection of this straight line and the Patuxent River channel boundary line between Calvert and St. Marys counties as laid down on "Chart No. 20, Natural Oyster Bars, Maryland;" thence up the channel of Patuxent River following the channel boundary line between Calvert and St. Marys counties and the channel boundary line between Calvert and Charles counties and the channel boundary line between Calvert and Prince Georges counties as laid down on "Charts Nos. 19 and 20, Natural Oyster Bars, Maryland;" thence continuing up the channel of Patuxent River following the channel boundary line between Calvert and Prince Georges counties to its end on the boundary line between Anne Arundel and Calvert counties.^c

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the U. S. Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Annapolis," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

^a For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, Superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

^b See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

^c Latitudes and longitudes based on the United States standard datum of the U. S. Coast and Geodetic Survey.

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county and the waters contiguous to but not within the territorial limits of adjacent counties.

This boundary line ^a has been delineated on the "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and is technically described and defined as follows:

Commencing at a point defined by the intersection of the mean low-water line of the western shore of Chesapeake Bay in the vicinity of Hog Point and the boundary line between Anne Arundel and Calvert counties; thence in a straight line along the Chesapeake Bay boundary between Anne Arundel and Calvert counties as laid down on "Charts Nos. 4 and 16, Natural Oyster Bars, Maryland," to a point defined by latitude $38^{\circ} 42' 33''.4$ and longitude $76^{\circ} 27' 40''.0$ situated about $3\frac{1}{2}$ miles east of Hog Point; thence in a straight line along the Chesapeake Bay boundary between Calvert and Talbot counties and Calvert and Dorchester counties as laid down on "Charts Nos. 16, 17, and 18, Natural Oyster Bars, Maryland," to a point defined by latitude $38^{\circ} 30' 00''.0$ and longitude $76^{\circ} 25' 30''.0$ situated about $4\frac{3}{4}$ miles east of Governors Run; thence in a straight line along the Chesapeake Bay boundary between Calvert and Dorchester counties as laid down on "Charts Nos. 17, 18, and 20, Natural Oyster Bars, Maryland," to a point defined by latitude $38^{\circ} 23' 10''.3$ and longitude $76^{\circ} 20' 00''.0$ situated about $2\frac{5}{8}$ miles east of Cove Point Light; thence in a straight line along the Chesapeake Bay boundary between Calvert and Dorchester counties as laid down on "Charts Nos. 18 and 20, Natural Oyster Bars, Maryland," to a point defined by latitude $38^{\circ} 19' 37''.7$ and longitude $76^{\circ} 19' 19''.0$ situated about $5\frac{1}{4}$ miles southeast of Cove Point Light and about $5\frac{1}{4}$ miles east by north of Drum Point Light; thence along the Chesapeake Bay boundary between Calvert and St. Marys counties as laid down on "Chart No. 20, Natural Oyster Bars, Maryland," to a point defined by the intersection of this boundary and a straight line between a point situated on Hog Point on the southern side of the entrance to Patuxent River defined by latitude $38^{\circ} 18' 35''.9$ and longitude $76^{\circ} 23' 59''.8$ and a point situated on Drum Point on the northern side of the entrance to Patuxent River defined by latitude $38^{\circ} 19' 09''.8$ and longitude $76^{\circ} 25' 21''.0$; thence in a straight line to a point at the end defined by latitude $38^{\circ} 19' 09''.8$ and longitude $76^{\circ} 25' 21''.0$ situated on Drum Point on the northern side of the entrance to Patuxent River.

^a See progress map at the end of this publication.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION.

The oyster laws of Maryland authorizing the survey to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of location and character of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking a landmark has only an indefinite idea of its location. They gradually proceed from description of the general locality of a landmark to the descriptions of its immediate surroundings. This is followed by specific details of the character of the center and reference marks and a "round" of reference angles and distances which in themselves frequently contain enough information to furnish an independent and reliable location of the triangulation station.

METHOD OF DESCRIBING TRIANGULATION STATIONS.

The separate descriptions of triangulation stations should not be used without reading the following explanation of the method of describing the triangulation stations, as it contains certain details that are common to all the landmarks described in this publication and which are omitted in the separate descriptions as being needless repetitions:

Name.—The title at the top of each separate description is the name by which the landmark or triangulation station is known and designated in all work and published oyster records or oyster charts of both the Government and State. The selection of the name is usually left to the triangulator establishing the station, and it may or may not have geographic or other significance in reference to the locality.

General locality.—Under this heading is given the general locality of the landmark in reference to well-known and prominent natural or artificial features, such as the

nearest body of water, town, river, steamer wharf, well-defined point of land, church, or any other feature that is likely to remain both permanent and prominent.

This heading also covers a reference to the published chart or map which shows the location of the station most clearly. Nearly all the triangulation stations described in this publication are plainly indicated by name and a triangulation symbol on the published charts of oyster bars of Maryland. In this case they are referred to by serial number only, the words "charts of oyster bars of Maryland" being omitted to avoid needless repetition. These published oyster charts are on the large scale of 1 part in 20,000 (approximately $3\frac{1}{6}$ inches to a statute mile) and show the location of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Immediate locality.—Under this heading is given the description of the "observed station" in reference to its immediate surroundings. This is supposed to include a statement of the station's estimated elevation above high water or some other well-defined level of the locality, such as a road or house; the character of the ground on which it is located, such as marsh land, sand beach, cultivated field, or meadow; estimated bearings in points of the compass and estimated distances in yards *from (not to)* easily recognized features, such as extreme end of point, edge of bluff, bank of creek, line of telephone poles, shore line, barn, house, fence, ditch, trees, or any other definite detail, such as being on range with the tangent of an island and a church; and so forth.

When a standard monument has been established near the station as a "reference station," this heading also covers a statement of the true bearing of the monument in degrees and minutes and its measured distance in meters, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached and might be mistaken for the center mark of the "observed station" unless special attention is called to it.

The distinction between the "observed station" and "reference station" should be carefully noted by anyone making use of the description of stations for any future surveying operations.

The "observed station" is located at the particular triangulation point covered by the description of stations, and is the one whose geographic position is first computed, as it is the point which was "occupied" and "observed on" for horizontal angles. However, in spite of the primary importance of the location of the "observed station," it will be noted from the description of stations that frequently it is not marked as well as the "reference station," and in many instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate "observed stations" on edges of banks and ends of points of land, which in the tide-water section of Maryland generally means they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the great need of "reference stations," if the frequent reestablishment of a new framework of triangulation is to be avoided.

The chief reason and need for the establishment of the "reference station," or secondary station, as it might be well named, is explained in the preceding paragraph, but in several instances other reasons, such as the location of the "observed station" on an unstable sand dune, in a cultivated field, in front of a residence, or other places

objectionable to the landowner, have led to establishment of "reference stations." The location of the "reference station" in relation to the "observed station" is fixed for plotting on charts or for computation of its geographic position by checked measurements of its distances and azimuth from the "observed station."^a

Marks.—Under this heading is given a description of the character of the permanent monuments or other marks of the location of the "observed station," and of the "reference station" where one has been established.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground, unless otherwise stated.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

References.—Under this heading are given the "rounds" of directions and distances to all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described, this, if possible, being a light-house, church spire, or other permanent and prominent point. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing^b of the initial object is always given in parenthesis alongside its name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by horizontal angles or for the relocation of corner buoys of oyster-bar boundaries by the method of compass directions described in this publication under the heading of "Boundaries of oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may

^a Geographic coordinates (latitude and longitude) and the distance and azimuth relating to any of the "observed stations" or of the "reference stations" described in this publication can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

^b The mean magnetic variation for Calvert County was $5^{\circ} 50'$ west of north in 1909 and increasing at the rate of $3'$ yearly.

be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of angular measure with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

HOLLAND.

General locality.—Western shore of Chesapeake Bay, on south side of entrance to Herring Bay on Holland Point. (See Chart No. 16.)

Immediate locality.—Observed station is about 30 yards west of point, 5 feet back from the top of a bank 7 feet high, 12 yards north of a large blazed tree and 25 yards east of another large blazed tree. Cement monument marking reference station is 12.88 meters S $33^{\circ} 52'$ W of observed station.

Marks.—Observed station is a nail in a pine stub. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Fairhaven" (N $48^{\circ} 13'$ W)	0	00	00	2 $\frac{1}{2}$ miles.
Nail in blaze on red-oak tree (2 $\frac{1}{2}$ feet diameter)	238	49	'	11.17 meters.
REFERENCE STATION	262	05	00	12.88 meters.
Nail in blaze on red-oak tree (2 $\frac{1}{2}$ feet diameter)	286	55	'	22.63 meters.

NOTE.—This station was established and described in 1906 during the survey of the oyster bars of Anne Arundel County.

HOG POINT (HOLLAND 3).

General locality.—Western shore of Chesapeake Bay, about half way between Herring Bay and Chesapeake Beach, on Hog Point, which is near the land end of boundary line between Anne Arundel and Calvert counties. (See Chart No. 16.)

Immediate locality.—Observed station is about 5 feet above high water mark on a narrow strip of solid land 25 yards by 10 yards between the edge of a large marsh and the bay shore, about 60 yards north of the point where the shore line changes direction from north and south to northeast and southwest. It is about 4 yards west of the bay shore, 4 yards east of top edge of hummock near marsh, 7 yards east of edge of marsh, 9 yards north northwest of point of a hummock, and 18 yards south by west of point of another hummock. Cement monument marking reference station of 1908 is 2.13 meters S $80^{\circ} 38'$ W of observed station.

Marks.—Observed station is nail in center of drain tile set in cement, with top flush with ground, the cement being roughly scribed "U. S. C. & G. S., 1907." Subsurface marks to observed station were reported in 1907 as being two hexagonal drain tiles placed one directly over the other, with top of upper 3 feet below the surface of the ground. Reference station of 1907 is marked the same as the observed station, except that only one drain tile was used as subsurface mark. Reference station of 1908 is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Sharps Island Light" (S $58^{\circ} 46'$ E)	0	00	00	9 $\frac{5}{8}$ miles.
Left tangent of North Chesapeake Beach wharf	58	16	'	$\frac{3}{4}$ mile.
Flagstaff on center of Carousel roof	64	49	30	1 $\frac{3}{8}$ miles
Large brick chimney	75	34	30	2 miles.
Water tank	76	44	50	2 miles.
Nail in blaze in white oak (16 inches diameter)	138	40	20	6.32 meters.
REFERENCE STATION 1908 (cement monument)	139	23	40	2.13 meters.

Nail in blaze in pin oak (18 inches diameter)-----	190	18	20	-----	7.98 meters.
Nail in blaze in pin oak (16 inches diameter)-----	236	14	--	-----	17.65 meters.
Nail in blaze in pin oak (18 inches diameter)-----	250	02	20	-----	21.96 meters.
REFERENCE STATION 1907 (tile)-----	255	18	50	-----	11.13 meters.
Left tangent of woods on eastern shore of bay-----	299	44	50	-----	9¼ miles.

NOTE.—This station is also known as "Holland 3 of 1907," but the name has been changed to "Hog Point (Holland 3)" in the oyster survey work of Calvert County, in order to avoid confusion with "Holland 1906," which is only 1 mile to the north.

BEACH.

General locality.—Western shore of Chesapeake Bay, about 1 mile south of Chesapeake Beach and ½ mile south of the first marshy slough south of Chesapeake Beach. (See Chart No. 16.)

Immediate locality.—Observed station is about 110 feet above high water and 7 yards back from the edge of the highest bluff in this vicinity. The ground falls off rapidly to the southwest and west of the station, and is covered with brush and small locust trees. A cultivated field extends to within 10 yards of the station on the northwest. Cement monument marking reference station of 1908 is 11.40 meters N 85° 05' W of observed station.

Marks.—Observed station is a nail in center of drain tile set in cement, with top flush with ground. Subsurface marks to observed station were reported in 1907 as being two hexagonal drain tiles placed one directly over the other, with top of upper 3 feet below the surface of the ground. Reference station of 1907 is marked the same as the observed station, except that only one drain tile was used as a subsurface mark. Reference station of 1908 is center point of triangle on standard cement monument.

References.—

"Hog Point (Holland 3)" (N 2° 55' E)---	0	00	00	-----	2½ miles.
Outside end of wharf at North Chesapeake Beach-----	0	45	--	-----	2 miles.
Outside end of wharf near Chesapeake Beach-----	18	17	--	-----	1 mile.
"Sharps Island Light"-----	102	46	20	-----	8¾ miles.
Nail in blazed locust tree-----	161	08	00	-----	16.85 meters.
REFERENCE STATION (cement monument, 1908)-----	272	00	20	-----	11.40 meters.
OLD REFERENCE POINT (tile—1907)-----	282	13	10	-----	10.25 meters.
Nail in blazed locust tree-----	289	58	20	-----	8.47 meters.
Near gable of house-----	343	16	--	-----	1 mile.
High View Hotel-----	344	57	--	-----	½ mile.
Cupola at Chesapeake Beach-----	348	04	--	-----	¾ mile.
Flagpole of "merry-go-round" at Chesapeake Beach-----	353	44	--	-----	¾ mile.
Left corner of house at North Chesapeake Beach-----	358	26	--	-----	2 miles.

ILL. 2.

General locality.—Western shore of Chesapeake Bay about 2¼ miles south of Chesapeake Beach and 2¾ miles north of Plum Point. (See Chart No. 16.)

Immediate locality.—Observed station is about 90 feet above high water and 12 feet west of edge of bluff which rises rapidly from the south. It is in a cultivated field about 100 yards south of a fence and trees running east and west and 7 feet west of a wire fence along edge of cliff. No other permanent reference objects near station. Cement monument marking reference station is 23.84 meters S 80° 43' W of station.

Marks.—Observed station is nail in cement in center of drain tile with top flush with ground. Subsurface marks to observed station were reported in 1907 as being two hexagonal drain tiles placed one directly over the other with top of upper 3 feet below the surface of the ground. Reference station of 1907 is marked the same as the observed station, except that only one drain tile was used as a subsurface mark. Reference station of 1908 is center point of triangle on standard cement monument.

References.—

	0	'	"	
"Sharps Island Light" (S 82° 30' E)-----	0	00	00	8¼ miles.
Tangent of land to south-----	62	39	--	1¼ miles.
New gable of unpainted barn-----	104	49	--	¾ mile.
Left chimney of four-gabled house-----	116	36	--	1 mile.
North gable of small barn-----	127	15	--	½ mile.
Center chimney of white house-----	140	33	--	¾ mile.
REFERENCE STATION of 1908 (cement monu- ment)-----	163	12	40	23.83 meters.
East gable of unpainted barn-----	164	10	--	¾ mile.
Chimney on outside of old house-----	169	41	--	1 mile.
REFERENCE STATION of 1907 (tile)-----	179	51	20	16.80 meters.
South gable of house at North Beach-----	260	29	--	2½ miles.
Tangent of woods on Holland Point-----	263	36	--	4½ miles.
Tangent on north end of Poplar Island-----	305	59	--	10¾ miles.

PLUM 3.

General locality.—Western shore of Chesapeake Bay about 1¼ miles north by west of Plum Point wharf and about ½ mile north by west of Plum Point. (See Chart No. 16.)

Immediate locality.—Observed station is about 7 yards west of edge of first bluff north of low land above Plum Point wharf and 12 yards south of rail fence and a line of bushes and cedar trees. Cement monument marking reference station of 1908 is 14.03 meters S 81° 43' W of observed station. No other reference objects near station.

Marks.—Observed station is center of drain tile with top flush with ground. Subsurface marks to observed station were reported in 1907 as being two hexagonal drain tiles placed one directly above the other with the top of the upper tile 3 feet below the surface of the ground. Reference station of 1907 is marked the same as the observed station except that only one drain tile was used as a subsurface mark. Reference station of 1908 is center point of triangle on standard cement monument.

References.—

	0	'	"	
"Sharps Island Light" (N 81° 31' E)-----	0	00	00	7 ⅝ miles.
Peak of near gable of large house-----	10	15	--	8¼ miles.
Outer end of Plum Point wharf-----	78	13	--	1¼ miles.
Chimney outside of north end of house-----	120	22	--	1¼ miles.
Southwest peak of barn-----	150	27	--	¾ mile.
REFERENCE STATION 1908 (cement monu- ment)-----	180	12	20	14.03 meters.
REFERENCE STATION 1907 (tile)-----	213	12	10	14.23 meters.
Tangent to Holland Point-----	273	31	--	7½ miles.
Right tangent Chesapeake Beach wharf-----	273	56	--	4¾ miles.
Left tangent Poplar Island-----	312	43	10	12½ miles.
Large lone tree Poplar Island-----	319	39	10	12 miles.
Left chimney of house-----	326	30	--	12¾ miles.
Left chimney of house-----	334	55	--	11 miles.
Steeple on church or house Tilghman Island-----	341	02	00	10 miles.

PIER.

General locality.—Western shore of Chesapeake Bay about south southeast of Plum Point on outer end of wharf at Plum Point Landing. (See Charts Nos. 16 and 17.)

Immediate locality.—Observed station is on outer part of wharf known as Plum Point Landing about 20 yards from extreme end and nearly on line with northern side of warehouse.

Marks.—Observed station is an auger hole bored in plank flooring of wharf surrounded by a triangle marked by nails.

References.—

Northeast corner of calf pen.....	Southeast.....	6.68 meters.
Northwest corner of calf pen.....	South southeast.....	4.48 meters.
Rail of fence on south edge of wharf.....	South.....	2.03 meters.
Prolongation of line of north side of warehouse.....		
house.....	North.....	0.11 meter.
South rail of wharf track.....	North.....	0.92 meter.
North rail of wharf track.....	North.....	2.36 meters.
North side of wharf.....	North.....	3.39 meters.
West side of warehouse.....	East.....	8.60 meters.

SHARPS ISLAND LIGHT.

General locality.—Easterly side of Chesapeake Bay off entrance to Choptank River on a shoal about $1\frac{1}{4}$ miles north northwest of Sharps Island. (See Chart No. 16.)

Immediate locality.—Observed station is on light-house known as "Sharps Island Light."

Marks.—Observed station is center point of black lantern on top of tower on a cylindrical caisson foundation.

Reference.—

	°	'	"	
"Parker" (S 44° 36' W).....	0	00	00	10 miles.

PEN.

General locality.—Western shore of Chesapeake Bay about half way between Plum Point and Governors Run on the outer end of Dares Wharf. (See Chart No. 17.)

Immediate locality.—Observed station is on outer part of Dares Wharf about 30 yards from the extreme end, 12 yards west of warehouse, and 1 yard north of south side of wharf.

Marks.—Observed station is auger hole in plank flooring surrounded by a triangle marked by nails.

References.—

Southwest corner of warehouse.....	East by south.....	11.10 meters.
Inside corner on angle in wharf.....	East by south.....	5.09 meters.
South edge of wharf.....	South.....	0.95 meter.
South rail of straight track at point of frog.....	North.....	2.13 meters.
South rail of curved track.....	North.....	0.90 meter.
North edge of wharf.....	North.....	4.15 meters.
Southwest corner of cattle pen.....	Northeast.....	7.12 meters.
Southeast corner of cattle pen.....	Northeast by north.....	9.63 meters.
Northwest corner of warehouse.....	Northeast by north.....	12.80 meters.

PATCH.

General locality.—Western shore of Chesapeake Bay about 1 mile south of Dares Wharf. (See Chart No. 17.)

Immediate locality.—Observed station is on a high bluff of land about 65 yards back from its edge. Station is in a cultivated field and on a high knoll and the land slopes away from it on all sides. A locust thicket stands northwest of the station and the land slopes steeply from the station to the thicket. Cement monument marking reference station is 9.07 meters N 52° 41' W of observed station.

Marks.—Observed station is nail set in cement in tile pipe buried with top about 15 inches below the surface of the ground. Reference station is center point of triangle on standard cement monument

References.—

	°	'	"	
"Sharps Island Light" (N 50° 39' E).....	0	00	00	10 miles.
"Cove Point Light".....	96	01	20	15 miles.
Tangent to Point of Rocks.....	98	30	--	4 miles.

	°	'	"	
East end of Governors Run wharf.....	112	57	--	1 ½ miles.
East end of roof of barn.....	155	25	--	1 mile.
Nail in blazed locust (old reference mark)...	210	17	50	11.93 meters.
Nail in blazed locust (old reference mark)...	226	02	50	12.04 meters.
REFERENCE STATION (cement monument)...	256	49	10	9.07 meters.
East peak of large barn on hill.....	257	14	--	½ mile.
East end of Plum Point wharf.....	316	50	--	3 ½ miles.

PARKER.

General locality.—Western shore of Chesapeake Bay about 2 miles north of Governors Run wharf and 2 ½ miles south of Dares Wharf. (See Chart No. 17.)

Immediate locality.—Observed station is about 100 feet above high water, 10 yards west of edge of bluff, 50 yards north of a small stream in a deep gully, and 25 yards east of cultivated field back of a growth of locust trees. The land slopes rapidly to the small stream from a point about 10 yards south of the station. Reference station is 23.29 meters N 83° 45' W of observed station.

Marks.—Observed station is nail in center of tile pipe filled with cement. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cove Point Light" (S 36° 39' E).....	0	00	00	11 miles.
East end of Governors Run wharf.....	11	10	--	1 ¼ miles.
REFERENCE STATION.....	132	54	10	23.29 meters.
Nail in blazed locust.....	159	39	25	8.19 meters.
East end of Dares Wharf.....	223	45	--	3 ¼ miles.
"Sharps Island Light".....	261	10	30	11 miles.
White house on Eastern Shore.....	327	32	--	10 miles.

RUN.

General locality.—Western shore of Chesapeake Bay on Governors Run wharf. (See Charts Nos. 17 and 18.)

Immediate locality.—East peak of wharf house.

Marks.—Observed station is braced pole with cage on east peak of wharf house on Governors Run wharf.

References.—None necessary.

POPLAR.

General locality.—Western shore of Chesapeake Bay about 2 miles south of Governors Run wharf (See Chart No. 18.)

Immediate locality.—Observed station is in a cultivated field about 60 feet above high water, 50 feet west from edge of bluff, 25 yards south of a ravine which starts at shore, 115 yards north of where high cliff covered with trees commences to rise rapidly, and 30 yards from a large poplar tree on opposite side of a ravine with sycamore, cherry, and locust trees along its edge. Another bluff rises rapidly on opposite side of ravine.

Marks.—Observed station is center point of triangle on standard cement monument with a sub-surface mark of a nail in a short stub.

References.—

	°	'	"	
"Sharps Island Light" (N 27° 41' E).....	0	00	00	12 miles.
Tangent of James Point woods.....	18	28	--	8 miles.
White house on Eastern Shore.....	65	00	--	8 miles.
Chimney on house.....	198	25	--	1 mile.
East peak of barn.....	203	37	--	1 ¼ miles.
East end of Governors Run wharf.....	309	18	--	1 ½ miles.
Chimney on white house above "Parker"...	310	45	--	2 ½ miles.
South peak of barn.....	311	47	--	2 ¾ miles.
Peak of unpainted barn.....	317	23	--	3 miles.

	°	'	"	
East end of Dares Wharf.....	320	43	--	4 miles.
East end of Plum Point wharf.....	324	57	--	8 miles.
Tangent of Plum Point.....	325	04	--	9 miles.

FLAG POND.

General locality.—Western shore of Chesapeake Bay, $3\frac{3}{4}$ miles north-northwest of Point of Rocks and 4 miles southeast of Governors Run. (See Chart No. 18.)

Immediate locality.—Observed station is on sand and grass land between bay shore and swamp about 5 feet above high water, 35 yards south of shore, 20 yards northwest of shore, 9 yards northwest of cedars between shore and station, 10 yards west of cedars and bushes, 25 yards west of shore, and 10 yards northeast of swamp. Cement monument marking reference station is 9.02 meters N $87^{\circ} 33'$ W of observed station.

Marks.—Observed station is a spike in cement in a stovepipe 4 inches in diameter and 1 foot long placed on top of a cement post 6 inches square with a $\frac{1}{4}$ -inch galvanized iron rod core. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cove Point Light" (S $41^{\circ} 57'$ E).....	0	00	00	$6\frac{1}{4}$ miles.
Spike in blaze.....	10	48	40	13.56 meters.
Spike in blaze in cedar tree.....	131	36	40	14.88 meters.
REFERENCE STATION.....	134	23	30	9.02 meters.
Spike in blaze in cedar tree.....	162	27	--	18.48 meters.
Spike in blaze in cedar tree.....	269	43	50	8.80 meters.
Right edge of main woods.....	282	19	50	$7\frac{1}{4}$ miles.
Left peak of house.....	302	07	50	$7\frac{1}{4}$ miles.
Left peak of house with two dormer windows.....	318	18	--	$8\frac{1}{2}$ miles.

WILSON 2.

General locality.—Western shore of Chesapeake Bay, about 5 miles northwest of "Cove Point Light." (See Chart No. 18.)

Immediate locality.—Observed station is on a sand bluff about 80 feet above high water, 30 yards south from one edge of bank, 15 yards southwest of another edge of bank, 20 yards northwest from point where decline begins toward southeast, 3 yards south of cultivated land, about $\frac{1}{4}$ mile north-northeast of house with two large chimneys on each end, and about $\frac{1}{2}$ mile northeast of a barn. Cement monument marking reference station is 1.56 meters N $88^{\circ} 28'$ E of observed station.

Marks.—Observed station is a $\frac{1}{4}$ -inch galvanized wire set in center of cement post about 6 inches square with top about 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument with top 6 inches above ground.

References.—

	°	'	"	
"Sharps Island Light" (N $14^{\circ} 54'$ E).....	0	00	00	14 miles.
Left of main woods.....	18	23	--	$15\frac{1}{4}$ miles.
REFERENCE STATION.....	73	34	20	1.56 meters.
Left peak of house.....	84	40	40	8 miles.
Near corner of near chimney of Wilson house.....	191	02	--	$\frac{1}{4}$ mile.
Peak of barn.....	225	25	--	$\frac{1}{2}$ mile.

POINT OF ROCKS.

General locality.—Western shore of Chesapeake Bay, on Point of Rocks, about $2\frac{3}{4}$ miles northwest of Cove Point Light. (See Chart No. 18.)

Survey of Oyster Bars, Calvert County, Md.

Immediate locality.—Observed station is in dense woods on a bluff about 90 feet high, 5 yards west of edge at extreme point, 8 yards south of edge of bluff, and 5 yards northwest of edge of bluff. Cement monument marking reference station is 9.42 meters S 66° 44' W of observed station.

Marks.—Observed station is nail in center of round stake 4 inches in diameter with top flush with ground driven into a 6-inch drain tile with top 6 inches below the surface. Subsurface mark was reported in 1898 as a 6-inch drain tile set just below upper tile. Reference station is center point of triangle on standard cement monument with top 4 inches above surface of ground.

References.—

	°	'	"	
"Cove Point Light" (S 43° 26' E).....	0	00	00	2¾ miles.
Center nail in blaze of tree (13 inches diameter).....	19	19	40	5.64 meters.
Center nail in blaze of tree (13 inches diameter).....	90	05	30	5.62 meters.
REFERENCE STATION.....	110	09	30	9.42 meters.
Nail in blaze in tree (9 inches diameter).....	126	35	40	4.16 meters.
Right tangent Governors Run Wharf.....	186	20	20	7½ miles.
Tangent of main woods.....	249	57		8½ miles.
Left peak of large house.....	297	45	20	6 miles.
Northerly peak of large house.....	312	17	30	6¾ miles.

COVE POINT LIGHT.

General locality.—Western shore of Chesapeake Bay on Cove Point, which is about 5 miles to northward of entrance to Patuxent River. (See Charts Nos. 18 and 20.)

Immediate locality.—Observed station is on white tower known as "Cove Point Light" which is near white detached dwelling and white detached fog signal house.

Marks.—Observed station is center point of black lantern on white tower.

References.—

	°	'	"	
"Cedar Point Light" (S 7° 16' E).....	0	00	00	6 miles.

WHITE HOUSE (N. E. CHIMNEY).

General locality.—Western shore of Chesapeake Bay about 1 mile southwest of Cove Point Light and ¼ mile southwest of Cove Point Landing. (See Charts Nos. 18 and 20.)

Immediate locality.—Observed station is a chimney standing alone about 300 yards southwest of Cove Point Landing which was formerly the more northeasterly of two chimneys on a house that was destroyed by fire. This chimney is near a white house which was built to replace the destroyed house.

Marks.—A chimney standing apart from a small white house owned by Mrs. Hagland.

References.—

	°	'	"	
"Cove Point Light" (N 39° 54' E).....	0	00	00	1 mile.

TRAVERS 2.

General locality.—Eastern shore of Chesapeake Bay on western side of Taylors Island about 4 miles south of James Point. (See Chart No. 18.)

Immediate locality.—Observed station is about 4 feet above high water mark in a field which was once under cultivation but is now covered with water bushes, about 40 yards east of shore and 15 feet north of a wire fence which starts at the shore and runs east. A stone used as an old reference mark stands 9.41 meters N 26° 53' E of observed station and the cement monument marking new reference station is 9.52 meters N 77° 20' W of observed station.

Marks.—Observed station is a granite post projecting above the ground with cross lines running approximately north to south and east to west. New reference station is center point of triangle on standard cement monument. Old reference station is a cross on a granite post projecting above the ground with one of the cross lines running in the direction of Cove Point Light.

References.—

	°	'	"	
"Cove Point Light" (S 26° 15' W)-----	0	00	00	6½ miles.
Governors Run Wharf-----	77	12	--	9½ miles.
Tangent of woods at waters edge-----	123	40	--	½ mile.
Near peak of two-story house-----	173	23	--	¼ mile.
OLD REFERENCE STONE (granite post)-----	180	38	20	9.41 meters.
Chimney of 1½ story house-----	195	47	--	¼ mile.
NEW REFERENCE STATION (cement monu- ment)-----	256	24	50	9.52 meters.
Near corner of small cabin-----	271	32	--	¼ mile.
Near chimney of house among trees-----	300	54	--	½ mile.
Near peak of small house-----	304	54	--	¼ mile.

PRINCE.

General locality.—Western shore of Patuxent River about ¼ mile north of mouth of Swanson Creek. (See Chart No. 19.)

Immediate locality.—Observed station is in pasture about 20 feet above high water, 15 yards north-west of edge of bank, 7½ yards northeast of a grove of trees and 100 yards southwest of another grove of trees. Locust trees form a fringe along edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Leitch" (S 83° 01' E)-----	0	00	00	¾ mile.
Square chimney on house-----	0	02	--	¾ mile.
Chimney on store at Buena Vista-----	19	15	--	1¾ miles.
Chimney of Dr. Huggins house at Buena Vista-----	21	07	--	1¾ miles.
Nearest chimney on Gourley house on Hal- lowing Point-----	55	16	--	2½ miles.
Nail in blaze in locust tree (3 inches diameter)-----	79	38	30	15.94 meters.
Nail in blaze in locust tree (4 inches diameter)-----	110	13	30	14.55 meters.
Outside chimney on large house on hill-----	150	45	--	¾ mile.
Near end of peak of roof-----	226	02	--	¾ mile.
Middle of clump of trees-----	273	00	--	100 yards.
Chimney of house-----	311	04	--	1¾ miles.
Nail in blaze in crotch of locust tree (6 inches diameter)-----	350	39	10	19.27 meters.

LEITCH.

General locality.—Eastern shore of Patuxent River on prominent point opposite mouth of Swanson Creek given on chart as Gods Grace Point but known locally as Leitchs Point. (See Chart No. 19.)

Immediate locality.—Observed station is on sand and grass land about 1 foot above high water and 3 yards north of straight line connecting two round points. It is about 13 yards northwest of the lower of these two points and 9 yards east of upper point. A creek 3 feet wide has its mouth about 19 yards east by south of the station. There are no permanent objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Prince" (N 83° 00' W)-----	0	00	00	¾ mile.
Near end of corner peak of roof of large house on hill-----	25	02	--	1¾ miles.
Near end of peak of wharf-house roof-----	77	46	--	¼ mile.
Right chimney of house-----	183	32	--	⅞ mile.

Survey of Oyster Bars, Calvert County, Md.

	°	'	"	
Right chimney of Gourley house.....	253	58	--	2 miles.
Canning-house stack.....	277	22	00	2 miles.
"Catholic Church Cross".....	281	35	30	2 miles.
Chimney of small house.....	308	52	--	1 mile.
Right outside chimney of old house.....	328	43	--	1 ¼ miles.
Right outside chimney of old house.....	343	05	--	1 ½ miles.

FODDER.

General locality.—Western shore of Patuxent River on the southern side of the mouth of Swanson Creek about 1 mile west-southwest of Leitch Wharf and ¾ mile west-northwest of Point Judith (locally known as Teague Point). (See Chart No. 19.)

Immediate locality.—Observed station is on the edge of cultivated land about 10 feet above high-water mark, 4 yards west of edge of bank, and 9 yards north of another edge. Cement monument marking reference station is 15.21 meters S 60° 52' W of observed station.

Marks.—Observed station is center point of triangle on standard cement monument with a top 9 inches square and 8 inches above surface of ground. Reference station is center point of triangle on standard cement monument with a top about 8 inches square and 5 inches above surface of ground.

References.—

	°	'	"	
"Prince" (N 25° 00' E).....	0	00	00	½ mile.
Near peak of large house on bluff.....	17	55	--	2 miles.
Right corner of house.....	24	08	--	1 ¾ miles.
Near peak of Leitch Wharf house.....	35	11	--	1 ¼ miles.
Left peak of Leitch house.....	48	37	--	1 ¼ miles.
Front peak of house at Buena Vista.....	75	00	--	1 ¼ miles.
Chimney outside left end of house on hill.....	87	16	--	2 miles.
Near peak of small house.....	101	33	--	¾ mile.
Large chimney on small house.....	174	43	--	1 mile.
Left side of left chimney outside Bowling house.....	211	47	--	¾ mile.
REFERENCE STATION.....	215	52	30	15.21 meters.
Left corner of house on top of hill.....	318	27	--	1 mile.

BUENA.

General locality.—Eastern shore of Patuxent River about 1 ¾ miles northeast of Benedict at place known as Buena Vista. (See Chart No. 19.)

Immediate locality.—Observed station is in a field on land adjoining house owned by S. V. Smith and occupied by Doctor Huggins. It is about 10 feet above high water, 8 yards east of edge of bank, and 12 yards south of a rail fence. Cement monument marking reference station is 11.11 meters N 5° 42' E of observed station and near fence.

Marks.—Observed station is nail in stub with top 2 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hallowing" (S 27° 22' W).....	0	00	00	1 ½ miles.
Center of red roof on square house near Benedict.....	18	05	--	2 miles.
Canning-house stack.....	21	30	--	1 ¾ miles.
"Catholic Church Cross".....	29	04	10	1 ¾ miles.
Nail in blaze in locust tree (4 inches diameter).....	31	48	40	8.58 meters.
Left chimney of old house.....	66	15	--	3 miles.
Left chimney of old house.....	72	52	--	3 miles.

	°	'	"	
Nail in blaze on cherry tree (2 inches diameter).....	99	05	--	9.70 meters.
Peak of roof of large house.....	99	15	--	4 miles.
Chimney of house near Leitch Wharf.....	108	52	--	1 mile.
Nail in blaze on fence post.....	143	33	50	11.18 meters.
REFERENCE STATION.....	158	20	20	11.11 meters.
Near corner of house.....	159	44	--	25 yards.
Cherry tree on fence line (15 inches diameter).....	221	25	--	35 yards.
Double apple tree (30 inches diameter).....	290	54	--	59 yards.

TEAGUE.

General locality.—Western shore of Patuxent River on point on southern side of entrance to Swan-son Creek, locally known as Teague Point, and given on chart as Point Judith. (See Chart No. 19.)

Immediate locality.—Observed station is on gravel and grass land about 3 feet above high water, about 11 yards from south side, 16 yards from north-northeast side, and 75 yards west by north of extreme end of point. Bushes stand between station and north side of point. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

	°	'	"	
"Buena" (N 85° 24' E).....	0	00	00	1½ miles.
Tangent of Teague Point.....	20	00	--	75 yards.
Near corner of right chimney of Gourley house near Hallowing Point.....	65	45	--	1¼ miles.
Canning-house stack.....	106	18	00	1¼ miles.
Near end of peak of hotel.....	108	12	--	1¼ miles.
Left one of two ivy-covered chimneys.....	110	25	--	1 mile.
"Catholic Church Cross".....	114	11	10	1 mile.
Chimney on Slye House.....	130	30	--	2 miles.
Left chimney of house on hill.....	144	57	--	2 miles.
Tangent of high-water mark.....	168	00	--	75 yards.
Near end of peak of roof.....	223	41	--	1 mile.
Chimney on large house on hill.....	243	20	--	3 miles.
Left chimney on house.....	301	17	--	1 mile.
Near end of peak of roof on store at Buena Vista.....	355	59	--	1¼ miles.

CITY.

General locality.—Western shore of Patuxent River on Town Point about ¼ mile north-northeast of Benedict steamboat wharf. (See Chart No. 19.)

Immediate locality.—Observed station is on gravel and shell point about 4 feet above high water, 12 yards northwest of the shore, 63 yards west-southwest of a shanty, about 100 yards west-southwest of extreme end of point, and 11 yards southeast of a slough. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

	°	'	"	
"Hallowing" (S 51° 21' E).....	0	00	00	½ mile.
Windmill near Sheridan Point.....	21	39	00	3½ miles.
Two middle chimneys at Dowells.....	21	39	00	3½ miles.
Left tangent of peak of wharf-house roof.....	81	34	--	¼ mile.
Center of roof of square house.....	84	36	20	½ mile.
Canning-house stack.....	95	22	00	¼ mile.
Nearest ivy-covered chimney of old house.....	130	14	--	⅓ mile.
"Catholic Church Cross".....	142	58	50	¼ mile.

	°	'	"	
Left square chimney of house	245	42	--	1¾ miles.
Near end of peak of roof of Huggins house ..	280	54	--	1½ miles.
Near corner of shanty	300	44	--	63 yards.
Right chimney of Gourley house	339	20	--	¾ mile.
Chimney of old building behind wharf	352	01	--	¾ mile

HALLOWING.

General locality.—Eastern shore of Patuxent River on point opposite Benedict known locally as Holland Point, but given on charts as Hallowing Point. (See Chart No. 19.)

Immediate locality.—Observed station is on a rounded gravel and grass point about 250 yards south of wharf on Holland Point, about 2 feet above high water, 10 yards north of shore, 8 yards east of shore and 15 yards outside of a group of locust trees, sugar-berry trees, and bushes.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"City" (N 51° 21' W)	0	00	00	¾ mile.
Left end of peak of roof of wharf house on Holland Point	23	15	--	250 yards.
Chimney of store at Buena Vista	77	27	--	1¾ miles.
Nail in blaze in nearest one of group of four sugar-berry trees (each 8 inches diameter) ..	92	24	--	12.88 meters.
Nail in blaze in sugar-berry tree (10 inches diameter)	109	58	50	15.74 meters.
Nail in blaze in locust tree (4 inches diame- ter)	167	55	40	11.90 meters.
Smokepipe on Trent Hall Wharf building ..	227	35	--	2¾ miles.
Outside chimney of detached house at Soth- orons	309	54	--	1½ miles.
Center of roof on square house	314	15	--	¾ mile.
Canning-house stack	333	16	--	½ mile.
"Catholic Church Cross"	347	44	20	¾ mile.

INDIAN.

General locality.—Western shore of Patuxent River on north side of entrance to Indian Creek and about one-fourth mile below Benedict steamboat wharf. (See Chart No. 19.)

Immediate locality.—Observed station is about 3 feet above high water, 7 yards west of shore, 16 yards northeast of a fence and a line of trees, 13 yards southwest of a lone locust tree, about 250 yards to the south-southeast of a large square house, and 125 yards east-northeast of another house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sothoron" (S 23° 11' E)	0	00	00	1 mile.
Nail in blaze in locust tree near fence (5 inches diameter)	33	48	50	15.57 meters.
Nail in blaze in middle branch of locust tree (6 inches diameter)	66	24	50	19.13 meters.
Square chimney on old house	137	23	--	1¾ miles.
Right chimney of square house	188	30	--	¾ mile.
Near end of peak of roof of hotel	206	26	--	¾ mile.
Canning-house stack	213	22	10	¾ mile.
Right tangent of Benedict Wharf	228	10	--	½ mile.
Chimney of house near "Buena Vista"	245	58	--	2¾ miles.
Chimney of Gourley house	270	28	--	1 mile.
Windmill at Dowell's on Sheridan Point ..	344	48	--	4¾ miles
Left of right chimney on Dowell house	344	48	--	4¾ miles.
Nail in blaze in left branch of locust tree (5 inches diameter)	225	28	--	12.90 meters.

DWARF.

General locality.—Eastern shore of Patuxent River about 2 miles north-northwest of Sheridan Point and about $1\frac{1}{2}$ miles southeast of Benedict on a point of land opposite the mouth of Indian Creek. (See Chart No. 19.)

Immediate locality.—Observed station is on sand and grass land about 1 foot above high-water mark, 6 yards northeast from extreme end of point, 4 yards east of one edge of shore and 6 yards north of another edge of shore. Point on which station is located has a sugar-berry tree, several small locust trees and water bushes, and a pond behind bushes and trees about 100 yards to the east.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sothoron" (S $42^{\circ} 05'$ W)-----	0	00	00	$\frac{3}{4}$ mile.
Nearest corner of top of nearest chimney on tenant house-----	80	31	--	2 miles.
Center of roof of square house-----	83	16	--	1 mile.
Nail in blaze in locust tree (4 inches diame- ter)-----	93	38	30	4.22 meters.
Canning-house stack-----	95	03	33	$1\frac{1}{4}$ miles.
"Catholic Church Cross"-----	99	03	10	$1\frac{1}{4}$ miles.
Left tangent of wharf-----	124	19	--	$\frac{3}{4}$ mile.
Nail in sugar-berry tree (10 inches diameter)-----	152	38	30	8.94 meters.
Nail in blaze in locust tree (3 inches diame- ter)-----	196	22	20	2.68 meters.
Chimney on small house-----	258	48	--	2 miles.
Left point of peak of roof of Dowell's-----	287	30	--	$2\frac{1}{4}$ miles.
Left end of peak of roof of Trent Hall Wharf-----	315	35	--	$1\frac{1}{2}$ miles.
Middle cupola on stable-----	321	12	20	$1\frac{1}{2}$ miles.
Right pillar on Sothoron house porch-----	359	21	--	1 mile.

SOTHORON.

General locality.—Western shore of Patuxent River on Long Point between entrances to Indian and Trent Hall creeks. (See Chart No. 19.)

Immediate locality.—Observed station is on sand and grass lowland about 1 foot above high-water mark among cedar trees, about 24 yards west by north of extreme end of point, 12 yards north of one edge of shore and 30 yards southwest of another edge of shore.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hallowing" (N $13^{\circ} 51'$ E)-----	0	00	00	$1\frac{1}{4}$ miles.
Nearest chimney on Gourley house-----	3	55	--	$1\frac{1}{4}$ miles.
Nail in blaze in locust tree (4 inches diame- ter)-----	30	49	--	3.35 meters.
Left end of peak of roof of Dowell house-----	120	35	--	$2\frac{1}{4}$ miles.
Middle cupola on Trent Hall stable-----	150	25	00	$1\frac{1}{4}$ miles.
Point of middle attic window on John Bul- linger house-----	187	42	--	1 mile.
Left pillar of porch of Sothoron house-----	206	23	--	$\frac{1}{2}$ mile.
Nail in blaze in cedar tree (12 inches diame- ter)-----	242	51	50	8.12 meters
Near corner of nearest chimney on Slye house-----	291	05	20	2 miles.
Nail in blaze in locust tree (4 inches diame- ter)-----	302	29	40	10.83 meters.
Right one of two outside chimneys on old house on hill on property of A. B. Slye-----	307	31	20	2 miles.
Center of roof on square house-----	323	39	10	1 mile.
Nail in blaze in locust tree (6 inches diame- ter)-----	350	24	10	12.81 meters.

BUZZ.

General locality.—Northeast shore of Patuxent River on southwest side of Buzzards Island near mouth of Buzzards Island Creek. (See Chart No. 19.)

Immediate locality.—Observed station is on marsh, clay, and grass land on wooded island about 2 feet above high water, 5 yards northeast of river shore and 40 yards northwest of extreme point of island. Cement monument marking reference station is 8.97 meters N 42° 23' E of observed station.

Marks.—Observed station is nail in stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Morsel" (S 25° 23' E).....	0	00	00	¾ mile.
Smoke pipe on roof of storehouse.....	39	11	--	2 miles.
Near corner of near chimney.....	40	36	--	2 miles.
Chimney of Trent Hall.....	50	48	--	1¼ miles.
Nearest of three cupolas on stable.....	54	36	50	1¼ mile.
Left piazza post at Sothorons.....	102	41	--	1¼ miles.
Center of roof of square house.....	155	15	--	1¾ miles.
"Catholic Church Cross".....	164	56	--	2 miles.
Nail in blaze in oak tree (18 inches diameter).....	172	14	--	4.55 meters.
Nail in blaze in oak tree (18 inches diameter).....	198	36	40	13.16 meters.
Nail in blaze in oak tree (24 inches diameter).....	235	08	30	9.62 meters.
REFERENCE STATION.....	252	45	45	8.97 meters.
Nail in blaze in pine tree (5 inches diameter).....	255	43	--	6.52 meters.
Chimney on house across creek.....	313	23	--	¼ mile.

BILLIARD.

General locality.—Southwest shore of Patuxent River about ¼ mile southeast of entrance to Trent Hall Creek. (See Chart No. 19.)

Immediate locality.—Observed station is on marsh land about 1 foot above high-water mark, 6 yards west of shore, 70 yards north of curve in shore and about 100 to 150 yards north to northwest of a fence which runs to water's edge. No permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Trent" (S 32° 53' E).....	0	00	00	¾ mile.
Middle cupola on Trent Hall stable.....	16	36	--	½ mile.
Chimney on Trent Hall.....	18	41	--	½ mile.
Two trees.....	31	47	--	200 yards.
Tangent of curve in water line.....	33	00	--	71 yards.
Chimney of 2½-story house.....	81	59	--	2 miles.
Right corner of Sothoron house.....	162	34	--	½ mile.
Near corner of chimney on Slye house.....	171	09	--	2 miles.
Right tangent of wharf.....	213	11	--	2 miles.
Middle of three chimneys on Gourley house.....	228	53	--	2 miles.
Chimney on house among trees.....	293	41	--	1½ miles.
Nearest end of peak roof of Dowell house at Dukes Wharf.....	333	42	--	1¾ miles.
Right tangent of Sheridan Point.....	341	34	--	1½ miles.
Left tangent Trent Hall Wharf.....	348	49	--	¾ mile.
Smoke pipe on house at land end of Trent Hall Wharf.....	356	53	--	¾ mile.

MORSEL.

General locality.—Northeast shore of Patuxent River about 1 mile north by west of Sheridan Point. (See Chart No. 19.)

Immediate locality.—Observed station is in a wheat field on a cliff about 60 feet above high water, about 5 yards northeast of edge of bank, 110 yards north northwest of rail fence at woods, 103 yards west southwest of woods, and 167 yards west northwest of corner of field at creek and woods. Trees grow out of face of cliff below station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sheridan" (S 5° 27' E)	0	00	00	7½ mile.
Near corner of near chimney on brick end of Dowell house	37	12	--	2 miles.
Chimney beyond weeping willow at Trent Hall	62	58	--	1 mile.
Nearest chimney on Slye house	128	11	--	3 miles.
"Catholic Church Cross"	148	44	00	2¾ miles.
Chimney on house with tin roof ell	172	17	--	1 mile.
Oak tree near creek (4 feet diameter)	297	27	--	167 yards.
Large white-oak tree	330	50	--	110 yards.

TRENT.

General locality.—Southwest shore of Patuxent River on White Point about 50 yards west of Trent Hall Wharf. (See Chart No. 19.)

Immediate locality.—Observed station is 1 foot above high-water mark on sand and grass land between river and marsh, about 47 yards west of small house on land end of Trent Hall Wharf, about 64 yards northwest of extreme end of White Point, 5 yards southwest of high-water mark, about 428 yards north of Trent Hall and 105 yards south by east of mouth of creek. Cement monument marking reference station is 17.18 meters S 69° 40' W of observed station.

Marks.—Observed station is nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sheridan" (S 57° 31' E)	0	00	00	1½ miles.
Tangent of point	32	17	--	½ mile.
Large lone tree	50	15	--	½ mile.
Right corner of Trent Hall	74	08	--	428 yards.
Right cupola of three on Trent Hall stable	99	40	--	300 yards.
Large lone tree	113	51	--	150 yards.
REFERENCE STATION	127	10	30	17.18 meters.
"Catholic Church Cross"	219	22	20	2¾ miles.
Right end of peak of roof of Holland Point Wharf	233	05	--	2¼ miles.
Right chimney of smaller of two houses among trees	284	01	--	2 miles.
Right chimney of house	300	35	--	5½ miles.
Right corner of shanty	300	36	--	47 yards.

COLLINS.

General locality.—Southwest shore of Patuxent River about ¼ mile northeast of entrance to Washington Creek on point opposite Sheridan Point. (See Chart No. 19.)

Immediate locality.—Observed station is on marsh land about 1 foot above high-water mark, 16 yards west of shore, 20 yards northwest of shore, 21 yards southwest of shore, 300 yards northeast of a tall lone tree and 300 yards southeast of house known as Trent Hall.

Survey of Oyster Bars, Calvert County, Md.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sheridan" (S 80° 59' E)	0	00	00	¾ mile.
Left end of peak of roof of De La Brooke Pier	52	12	--	2¼ miles.
Right side of right chimney of large painted brick house	60	23	--	2¼ miles.
Near corner of Thomas house (Cremona)	73	22	--	1 mile.
Smoke pipe in chimney on store	98	23	--	½ mile.
Large lone tree	129	07	--	300 yards.
Small lone tree	175	10	--	130 yards.
Near corner of Trent Hall Wharf house	244	37	--	½ mile.
Chimney on end of roof of house among trees	287	41	--	2¼ miles.
Left corner of left chimney of Dowell house	354	11	--	1 mile.

SHERIDAN.

General locality.—Northeast shore of Patuxent River on Sheridan Point. (See Chart No. 19.)

Immediate locality.—Observed station is on sand and grass point near edge of the grass, about 2 feet above high-water mark, 6 yards east of extreme edge of grass on point, 8 yards north of grass edge and 7 yards south of grass edge. Cement monument marking reference station is 14.13 meters N 49° 56' E of observed station.

Marks.—Observed station is nail in stub with top 6 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Kitt" (S 66° 05' E)	0	00	00	1¼ miles.
Right tangent of brick house	10	41	--	6 miles.
Left end of peak of roof of De La Brooke Pier	56	13	--	1¾ miles.
Left corner of left chimney of Thomas house (Cremona)	102	38	--	1¼ miles.
Smoke pipe on several gable house	124	25	--	1¼ miles.
Right tangent of Trent Hall Wharf	192	00	--	1 mile.
Catholic Church at Benedict	216	56	--	3½ miles.
REFERENCE STATION	296	01	00	14.13 meters.
Near chimney of Dowell house	325	23	--	¼ mile.

CREMONA.

General locality.—Southwest shore of Patuxent River about half way between Cremona and Persimmon creeks. (See Chart No. 19.)

Immediate locality.—Observed station is in orchard on farm known as Cremona, about 6 feet above high-water mark, 10 yards south of edge of river bank, 7 yards south of rail fence which runs west and east to door yard fence, 36 yards east of rail fence of cornfield, 75 yards north of rail fence at cornfield and 53 yards west of picket fence. Several mountain dwarf cherry trees stand between fence and river bank edge.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Kitt" (N 84° 13' E)	0	00	00	2 miles.
Near end of peak of roof of Young Hance house	16	26	--	3 miles.
Nail in blaze in apple tree (24 inches diameter)	37	38	20	24.55 meters.

Nail in blaze in apple tree (16 inches diameter).....	0	'	"		
	62	43	30	-----	13.12 meters.
Nail in blaze in apple tree (15 inches diameter).....	100	33	30	-----	16.11 meters.
Corner of field.....	181	55	--	-----	87 yards.
Corner of field.....	233	32	--	-----	38 yards.

KITT.

General locality.—Northeast shore of Patuxent River on Kitts Marsh Point, which is about half-way between Battle Creek and Sheridan Point. (See Chart No. 19.)

Immediate locality.—Observed station is on the point of a long marsh neck, about 15 yards north-east of extreme end of point, 13 yards north of edge of marsh, and 13 yards east of edge of marsh. There are no permanent reference objects near station. Cement monument marking reference station is 15.84 meters N 10° 23' E of observed station..

Marks.—Observed station is nail in stub flush with surface of marsh. Reference station is center point of triangle on standard cement monument.

References.—

	0	'	"		
"Battle" (S 39° 02' E).....	0	00	00	-----	1½ miles.
Right tangent of Long Marsh.....	7	53	--	-----	2 miles.
Near end of peak of roof of De La Brooke Pier.....	73	52	--	-----	1½ miles.
Near corner of near chimney of Thomas house.....	83	31	--	-----	1¾ miles.
Large house.....	167	38	--	-----	1 mile.
Square chimney of large house.....	185	23	--	-----	¾ mile.
REFERENCE STATION.....	229	24	40	-----	15.84 meters.
Left chimney of house.....	243	56	--	-----	2½ miles.
Hance house.....	299	13	--	-----	2 miles.
Right chimney of house among trees on hill.....	327	24	--	-----	4 miles.
Left chimney of house.....	336	59	--	-----	4 miles.

OPPKIT.

General locality.—Southwest shore of Patuxent River on Marsh Point. (See Chart No. 19.)

Immediate locality.—Observed station is on sand and grass ridge between sand beach and marsh, about 1 foot above high water, 3 yards southwest of high water mark, 60 yards west-northwest of one point of the beach, 64 yards south of another point of the beach, and 85 yards north-northwest of an oyster watch house on piles. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	'	"		
"Kitt" (N 56° 31' E).....	0	00	00	-----	1½ miles.
Near end of peak of roof of Williams Wharf house.....	36	46	--	-----	2½ miles.
Left corner of watch house.....	87	27	--	-----	85 yards
Left point of peak of roof of De La Brooke Pier.....	94	09	--	-----	1 mile.
Right corner of right chimney of brick house.....	126	42	--	-----	1½ mile.
Chimney on house near trees.....	232	43	--	-----	¾ mile.
Highest chimney on Cremona House.....	254	49	--	-----	¾ mile.
Point of roof of Dukes Wharf.....	310	09	--	-----	1½ miles.
Chimney on house with ell.....	330	49	--	-----	1½ miles.
Large square brick chimney on house with ell.....	334	08	--	-----	1½ miles.
Nearest chimney of pair on end of house.....	353	00	--	-----	1½ miles.

BATTLE.

General locality.—Northeast shore of Patuxent River on west side of entrance to Battle Creek on Prison Point. (See Chart No. 19.)

Immediate locality.—Observed station is on sand and grass land between marsh and river, about 1 foot above high water, 85 yards south of a field, 6 yards northeast of shore, 20 yards southwest of edge of a pool, 100 yards southwest by west of a lone tree, 200 yards west of a small house among trees, and 100 yards west to northwest of several dwarf trees between house and beach.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Forr" (S 3° 17' E).....	0	00	00	2¼ miles.
Chimney on middle of roof of house.....	1	52	--	2¼ miles.
Left corner of left chimney of very large house.....	8	36	--	2¼ miles.
Right chimney of large 2½-story brick house.....	82	00	--	1½ miles.
Tangent to Sheridan Point.....	129	20	--	2¼ miles.
Right end of peak of roof of 2½-story house.....	139	50	--	2¼ miles.
Chimney of 2½-story house on hill.....	155	19	--	2 miles.
Lone tree.....	254	41	--	80 yards.
Outside chimney of house on hill.....	264	11	--	3 miles.
House among trees.....	282	15	--	100 yards.
Tangent of Long Marsh.....	341	45	--	1½ miles.
Left chimney of 2½-story house.....	348	38	--	3 miles.
Chimney of 2½-story house.....	352	57	--	2 miles.
Right tangent of Forrest Wharf.....	357	59	--	1½ miles.

PHOTO.

General locality.—Northeast side of Patuxent River on east side of entrance to Jacks Bay. (See Chart No. 19.)

Immediate locality.—Observed station is in a cultivated field, about 150 yards north-northeast of a marshy point, 10 feet above high-water mark, 49 yards east of shore, 110 yards north northwest of shore, and 68 yards northeast of right end of clump of trees at edge of field and beginning of marsh point.

Marks.—Observed station is nail in stub with top 2 inches above surface of ground. Subsurface mark is center point of triangle on standard cement monument with top 12 inches below surface.

References.—

	°	'	"	
"Slim" (S 52° 03' E).....	0	00	00	1½ miles.
Chimney on old house.....	51	21	--	2 miles.
Cedar trees.....	60	00	--	85 yards.
Left corner of house.....	73	03	--	2 miles.
Smoke pipe on house behind trees.....	78	08	00	2 miles.
Left tangent of Forrest Wharf.....	81	00	20	2¼ miles.
Tree.....	90	10	--	70 yards.
Watchhouse on point.....	118	52	--	½ mile.
Right chimney on 2½-story brick house.....	150	37	--	5 miles.
Locust tree (20 inches diameter).....	241	23	--	135 yards.
Left chimney of house.....	222	45	--	½ mile.
Willow tree.....	331	27	--	140 yards.

FIGHT.

General locality.—Southwest shore of Patuxent River opposite mouth of Battle Creek on a prominent low point. (See Chart No. 19.)

Immediate locality.—Observed station is on land known as Horsehead Marsh, about 1 foot above ordinary high-water mark, 12 yards south-southwest of extreme end of point, 15 yards west-northwest of shore at small creek, 40 yards northeast of woods, and 110 yards east-southeast of a bluff 50 feet high.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Battle" (N 50° 45' E)-----	0	00	00	1¾ miles.
Outside chimney in center of group of build- ings-----	13	30	--	2¼ miles.
Left chimney of house on top of hill-----	23	44	--	3¾ miles.
Left tangent of Forrest Wharf-----	82	06	10	2 miles.
Near end of peak of roof of 2½-story build- ing-----	83	47	--	1¾ miles.
Large square chimney on large building---	91	19	--	1 mile.
Left corner of left chimney of large house--	262	40	--	1 mile.
Dowells windmill-----	300	28	--	2½ miles.
Left chimney on small house adjoining large house-----	321	41	--	2¼ miles.
Chimney of small house-----	325	38	--	2 miles.

SLIM.

General locality.—Northeast shore of Patuxent River about half way between Battle and Island creeks and ¼ mile west northwest of Parkers Wharf. (See Chart No. 19.)

Immediate locality.—Observed station is in a field on a sand bluff, about 40 feet above high water, 13 yards northeast of edge of bluff, 90 yards southeast of a point of woods at top of a ravine, about 189 yards southwest of another point of woods, 150 yards west-northwest of a rail fence, and 71 yards northwest by west of a large sycamore tree.

Marks.—Observed station is nail in round chestnut stub with top about 6 inches above the surface of the ground. Subsurface mark is center point of triangle on standard cement monument with top 10 inches below the surface of the ground.

References.—

	o	'	"	
"Island" (S 59° 31' E)-----	0	00	00	2½ miles.
Cedar in field-----	2	38	50	200 yards.
Large sycamore tree-----	29	20	--	71 yards.
Near end of peak of roof of Jones Wharf house-----	53	27	--	2½ miles.
Chimney on middle of roof of a long house--	109	34	--	1¾ miles.
Outside chimney of house near Forrest Wharf-----	125	26	--	2 miles.
Nearest chimney on Thomas large brick house-----	166	16	--	4 miles.
Tangent of Long Point marsh-----	171	24	--	1½ miles.
Left tree on point-----	191	06	--	90 yards.
Two high trees close together near right edge of point of woods-----	284	27	--	189 yards.
Large walnut tree-----	298	20	--	¼ mile.
Near end of peak of roof of barn-----	304	23	--	½ mile.

FORR.

General locality.—Southwest shore of Patuxent River just below Forrest Wharf. (See Chart No. 19.)

Immediate locality.—Observed station is about 1 foot above high-water mark on sand and grass land, 7 yards south from extreme high-water mark, 45 yards southeast of land end of Forrest Wharf, 70 yards east by south of an old 2½-story building, and 65 yards northeast of a saloon.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Cole" (S 50° 07' E)-----	0	00	00	1¾ miles.
Near corner of house on hillside-----	9	59	--	180 yards.
Near corner of saloon-----	101	52	--	65 yards.

Survey of Oyster Bars, Calvert County, Md.

	°	'	"	
Outside chimney on house on hill.....	115	22	--	1/4 mile.
Curve in road up hill.....	131	25	--	200 yards.
West corner of old 2 1/2-story building.....	139	52	--	70 yards.
Land end of wharf.....	169	15	--	45 yards.
Windmill.....	182	59	40	2 3/4 miles.
Left corner of left chimney brick house.....	183	05	--	3 miles.
Right tangent of Dukes Wharf.....	187	07	--	4 1/4 miles.
Near end of peak of roof of Forrest Wharf house.....	257	17	--	1/4 mile.
Chimney of house.....	272	35	--	3 or 4 miles.
Right tangent of roof.....	304	23	--	2 1/2 miles.
Tangent of trees.....	347	46	--	3 miles.

SWEEP.

General locality.—Northeast shore of Patuxent River on northwest side of mouth of Island Creek near inner end of neck of land joining Broome Island to the mainland. (See Chart No. 19.)

Immediate locality.—Observed station is in a field about 4 feet above high water, 4 feet northwest of a wire fence, 24 yards south by west of a stable, 60 yards south-southwest of a house, and 100 yards south-southeast of a pine grove. Cement monument marking reference station is 21.70 meters N 59° 39' E of station and near fence line.

Marks.—Observed station is the center of an oblong wooden box 4 inches square with top 4 inches above the ground. Reference station is center point of triangle on a standard cement monument.

References.—

	°	'	"	
"Bars" (S 15° 10' E).....	0	00	00	2 miles.
Right chimney of house.....	14	48	--	3 miles.
Peak of roof of Gadden house.....	25	34	20	1 1/2 miles.
Tangent of Broome Island Point.....	43	21	--	1/2 mile.
Chimney on house on hill.....	51	57	--	3 miles.
Gilt ball on lightning rod.....	62	03	--	3/8 mile.
Chimney on house.....	96	06	--	1/4 mile.
Cut in woods.....	135	40	--	1 1/2 miles.
Chimney of house.....	186	34	--	150 yards.
Tile smoke pipe on house.....	203	24	--	140 yards.
Near corner of house.....	230	35	--	60 yards.
Near corner of barn.....	237	32	--	24 yards.
REFERENCE STATION.....	254	49	20	21.70 meters.
Right chimney of four on house.....	279	25	--	1/4 mile.
Top of tower of house.....	301	54	--	2 1/2 miles.

ISLAND.

General locality.—Northeast shore of Patuxent River on the extreme southeast point of land about 1/2 mile to the east of the mouth of Island Creek. (See Chart No. 19.)

Immediate locality.—Observed station is on a marshy point at about extreme high-water mark, 30 yards north of extreme end of point, 25 yards east of one side of point, and 20 yards west of another side of point. Old tile pipe used as a reference station is 16.98 meters N 12° 39' E and cement monument marking new reference station is 30.93 meters N 2° 40' E of observed station.

Marks.—Observed station is nail in stub with top flush with marsh. Old reference station is center of 4-inch tile pipe set in cement with top projecting about 10 inches above ground. New reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Wheat" (S 53° 15' E).....	0	00	00	2 miles.
Left end of peak of roof of Sotterly Wharf house.....	46	07	--	2 miles.
Pinnacle of large house in trees.....	60	49	--	2 miles.

	o	'	"	
Left chimney of large house back on hill.....	67	54	--	2 miles.
Chimney on middle of large 2½-story house.....	109	59	--	1½ miles.
Middle of railing on top of roof of 2½-story house.....	120	00	--	3 miles.
Chimney of Broome house.....	143	41	--	¾ mile.
Weather vane on Broome house.....	148	33	30	¾ mile.
Right chimney of house.....	178	21	--	3 miles.
Right chimney of house.....	193	27	--	2 miles.
REFERENCE STATION (cement monument).....	235	55	00	30.93 meters.
REFERENCE STATION (tile pipe).....	245	54	20	16.98 meters.
Smoke pipe of watchhouse.....	333	29	--	1 mile.
Tower of Peterson house.....	356	08	--	2 miles.

PEAK.

General locality.—Northeast shore of Patuxent River, about in middle of inner shore of a large bay between St. Leonard and Island creeks. (See Chart No. 19.)

Immediate locality.—Observed station is on Parran house, located near shore at extreme end of a road leading to Wallville.

Marks.—Observed station is ball on tip of tower.

References.—None necessary.

COLE.

General locality.—Southwest shore of Patuxent River, about ¼ mile northwest of Cole Creek. (See Chart No. 19.)

Immediate locality.—Observed station is about 35 feet above high-water mark on a grass peninsula, 3 yards south-southwest of edge of a bluff which is washing rapidly, 8 yards west of extreme edge of bluff, where it turns inland and is not washing, but slopes gradually to the water, 8 yards north of another edge of the bluff, 10 yards northwest of trees on slope of bank, and 20 yards west of a cherry tree 2 feet in diameter. Cement monument marking reference station is 13.53 meters S 83° 10' W of observed station and nearly on line with large cherry tree.

Marks.—Observed station is nail in stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

	o	'	"	
"Hutchins" (S 67° 12' E).....	0	00	00	2 miles.
Left end of peak of roof on Jones Wharf house.....	6	25	--	1½ miles.
Nail in blaze on limb of oak tree (4 inches diameter).....	22	05	--	10.80 meters.
Screw in blaze in crotch of oak tree (15 inches diameter at base).....	38	18	--	12.67 meters.
Nail in blaze of cedar tree (6 inches diameter).....	63	40	40	8.43 meters.
Nail in blaze on cherry tree (24 inches diameter).....	147	11	--	18.65 meters.
REFERENCE STATION.....	150	22	00	13.53 meters.
Right chimney of house.....	179	11	--	¾ mile.
Right end of peak of roof of Forrest Wharf house.....	202	21	--	1½ miles.
Right end of house.....	251	03	--	3 miles.
Left end of peak of house.....	280	23	--	3 miles.
Gilt ball on Broome house.....	321	30	30	2 miles.
Right tangent of Broome Island.....	334	17	--	1¾ miles.

HUTCHINS.

General locality.—Southwest shore of Patuxent River opposite Broome Island on Captain Point, about $\frac{1}{4}$ mile northwest of mouth of Cole Creek. (See Chart No. 19.)

Immediate locality.—Observed station is in garden on point of a bluff 50 feet high on Hutchins estate near house occupied by Mr. Gadden, about 6 yards south by east of extreme point of bluff, 2 yards southwest of edge of bluff, 4 yards southeast of edge of bluff, 30 yards north by west from house, 30 yards west of a wire fence running north and south, and 15 yards east of another north-and-south wire fence. Cement monument marking reference station is 7.57 meters $S 59^{\circ} 39'$ W of observed station.

Marks.—Observed station is nail in a stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Bars" (S $68^{\circ} 07'$ E).....	0	00	00	$\frac{7}{8}$ mile.
Left corner of extension of Gadden house.....	58	17	--	30.90 meters.
Right front corner of Gadden house.....	84	56	--	28.57 meters.
Near corner of well house.....	102	15	--	30.44 meters.
Near corner of shed.....	119	43	--	45 yards.
REFERENCE STATION.....	127	46	--	7.57 meters.
Nail in blaze in apple tree (22 inches diameter).....	148	06	20	9.35 meters.
Right tangent of Parkers Wharf.....	228	12	--	$2\frac{1}{2}$ miles.
Gilt ball on Broome house on Broome Island.....	249	55	--	$1\frac{1}{2}$ miles.
Near end of peak of house.....	263	17	--	4 miles.
Tip of tower on Peterson house.....	332	52	--	$2\frac{1}{2}$ miles.

WHEAT.

General locality.—Northeast shore of Patuxent River on westerly side of mouth of St. Leonard Creek. (See Charts Nos. 19 and 20.)

Immediate locality.—Observed station is on a bluff about 40 feet above high water, about 5 yards west of edge of bank, 7 yards south of another edge, and $\frac{3}{4}$ mile west of Peterson house. Cement monument marking reference station is 12.80 meters N $61^{\circ} 55'$ E of observed station and on line to Peterson house.

Marks.—Observed station is center of a 4-inch tile pipe set in cement with top projecting about 4 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Stump" (S $36^{\circ} 23'$ E).....	0	00	00	$2\frac{1}{4}$ miles.
Left chimney of Judge Crane house.....	10	07	--	$4\frac{3}{4}$ miles.
Near end of peak of roof of Marburger house.....	15	05	--	$4\frac{1}{4}$ miles.
Left end of roof of St. Cuthbert Wharf.....	24	09	--	$2\frac{1}{4}$ miles.
Chimney on roof of house.....	60	05	--	$1\frac{1}{2}$ miles.
Chimney on store at Sotterly.....	93	41	--	$1\frac{1}{2}$ miles.
Left end of barn roof.....	193	27	--	2 miles.
REFERENCE STATION.....	278	17	30	12.80 meters.
Center chimney of Peterson house.....	281	22	--	$\frac{1}{4}$ mile.
Chimney of house.....	298	03	--	$\frac{1}{8}$ mile.
Chimney on house on Breeden estate.....	340	04	--	2 miles.

MACKALL.

General locality.—Northwest shore of Patuxent River on west side of entrance to St. Leonard Creek on first point inside of Peterson Point. (See Charts Nos. 19 and 20.)

Immediate locality.—Observed station is about 50 feet above high water, 9 feet northwest of edge of bluff, 7 yards northeast of bushes, and 3 yards southwest of other bushes. Cement monument marking reference station is 3.80 meters N $35^{\circ} 08'$ W of observed station.

Marks.—Observed station is the center of an oblong wooden box 4 inches square with top 3 inches above the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Stock" (S 34° 38' W)-----	0	00	00	1¾ miles.
Peak of front gable of Bond house-----	0	39	10	1¾ miles.
Chimney on negro house-----	54	31	---	¾ mile.
Chimney on Peterson house-----	66	25	---	¼ mile.
REFERENCE STATION-----	110	13	50	3.80 meters.
Chimney on negro house-----	135	49	---	¾ mile.
Chimney on ell of house on hill-----	153	46	---	½ mile.
Chimney on small house back of Sollers Wharf-----	229	40	---	1 mile.
Nearest outside chimney on 1½-story house.	236	08	---	2 miles.
Large chimney on Sollers house-----	237	02	---	¾ mile.
Large chimney on Taylor house-----	285	27	---	½ mile.
Front peak of Briscoe house-----	334	30	---	2½ miles.

SOLLERS.

General locality.—Northeast shore of Patuxent River on east side of entrance to St. Leonard Creek. (See Charts Nos. 19 and 20.)

Immediate locality.—Observed station is about 50 feet above high water, 6 feet east of edge of bank, 20 yards north-northeast of a clump of trees, 14 yards and 8 yards south-southwest of other trees, and 75 yards north-northwest of a rail fence. Cement monument marking reference station is 13.68 meters S. 44° 00' E of observed station with top buried 12 inches below surface.

Marks.—Observed station is the center of an oblong wooden box 5 inches square with top 3 inches above ground. Reference station is center point of triangle on standard cement monument with top 12 inches below surface.

References.—

	°	'	"	
"Stock" (S 44° 24' W)-----	0	00	00	1½ miles.
Middle of front gable of Bond house-----	0	34	---	1¾ miles.
Chimney of store at Sotterly Wharf-----	26	58	---	2½ miles.
Near corner of outside chimney on house--	27	18	---	2½ miles.
Chimney on top of Gadden house-----	46	14	---	2½ miles.
Near corner of top chimney on Peterson house-----	78	27	---	½ mile.
Right end of peak of roof of Mackall house.	150	16	---	½ mile.
REFERENCE STATION-----	271	35	30	13.68 meters.
Near corner of large chimney on Taylor house-----	272	35	---	¾ mile.
Top of front gable on Briscoe house-----	331	36	---	1¾ miles.

BARS.

General locality.—Southwest shore of Patuxent River on Sotterly Point about ¼ mile northwest of Sotterly Wharf. (See Chart No. 19.)

Immediate locality.—Observed station is on a bluff about 30 feet above high water, 5 yards south of edge of bank at rail fence, and 2 yards east of this same fence. Cement monument marking reference station is 14.53 meters S 9° 54' W of observed station and near fence line.

Marks.—Observed station is center of a 3-inch tile pipe set in cement. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Wheat" (N 72° 06' E)-----	0	00	00	1½ miles.
Chimney on middle of 2½-story house-----	17	29	---	6 miles.
Windmill-----	23	23	---	3 miles.
Chimney of house-----	41	50	---	4 miles.
REFERENCE STATION-----	117	48	00	14.53 meters.
Smoke pipe on right end of house-----	157	37	---	¼ mile.
Tangent of point of land-----	250	47	---	1½ miles.
Peterson house chimney-----	359	22	---	1¾ miles.

LEND.

General locality.—Northeast shore of Patuxent River on a narrow strip of land or peninsula in mouth of Mears Creek about $\frac{1}{2}$ mile southeast of St. Leonard Creek. (See Charts Nos. 19 and 20.)

Immediate locality.—Observed station is in the midst of many cherry, oak, and locust trees about 15 feet above high-water mark, 15 yards east-northeast of high ground, 5 yards west of edge and 17 yards north of extreme point of top of peninsula.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Wheat" (N 50° 51' W)-----	0	00	00	1 $\frac{1}{4}$ miles.
Nail in blaze in cherry tree (4 inches diameter)-----	118	28	30	3.58 meters.
Right chimney of house across creek-----	139	51	--	$\frac{1}{4}$ mile.
Nail in blaze in oak tree (8 inches diameter)-----	229	51	--	6.68 meters.
Outside chimney on left end of Briscoe house-----	265	61	--	1 $\frac{1}{2}$ miles.
Near peak of Bond house-----	297	57	--	1 $\frac{3}{8}$ miles.
Chimney on storehouse at Sotterly-----	318	19	--	2 $\frac{1}{4}$ miles.
Near end of peak of roof of Sotterly Wharf house-----	319	07	--	2 $\frac{1}{4}$ miles.
Chimney on Gadden house-----	330	47	--	3 $\frac{1}{4}$ miles.
Nail in blaze in cherry tree (6 inches diameter)-----	345	24	--	3.64 meters.

STOCK.

General locality.—Southwest shore of Patuxent River about 1 mile southeast of Sotterly Point. (See Chart No. 19.)

Immediate locality.—Observed station is on a bluff, about 20 feet above high water, 3 yards southwest of edge of bluff, about 50 yards east by north of front door of the house of Mr. Bond, 30 yards west-northwest of extreme end of point of bluff, 35 yards northeast of detached house, and about 43 yards east by south of yard fence at edge of bluff.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Lend" (N 66° 48' E)-----	0	00	00	1 $\frac{3}{8}$ miles.
Right chimney of house on Dickson place--	1	35	--	1 $\frac{3}{4}$ miles.
Right chimney of old 1 $\frac{1}{2}$ -story house-----	19	00	--	2 miles.
Tangent of bluff-----	58	00	--	1 mile.
Chimney on house on point-----	59	03	--	1 mile.
Nail in blaze in locust tree (4 inches diameter)-----	99	48	30	2.18 meters.
Nearest corner of outhouse, corner farthest from house-----	161	29	30	34.30 meters.
Left corner of house-----	180	31	30	31.13 meters.
Nail in blaze in cherry tree 1 foot above ground (4 feet diameter)-----	183	39	30	20.58 meters.
Right corner of house-----	205	29	40	45.79 meters.
Locust tree (4 inches diameter)-----	210	31	40	8.83 meters.
End of yard fence-----	230	31	--	43 yards.
Tree near edge of bank (no nail or blaze)---	237	39	20	34.27 meters.

STUMP.

General locality.—Northeast shore of Patuxent River about $\frac{1}{2}$ mile northwest of Hellen Creek. (See Chart No. 20.)

Immediate locality.—Observed station is on a bank about 20 feet above high water, 10 yards north-northeast of edge of bank at extreme end of point, about 20 yards southeast of edge of bank, and about

150 yards northwest of a clump of cedar and locust trees at edge of bank. Cement monument marking first reference station is 11.29 meters N $61^{\circ} 51'$ E of observed station with top 10 inches below surface of field. Cement monument marking second reference station is 26.22 meters N $60^{\circ} 42'$ E of observed station about on line with first reference station.

Marks.—Observed station is center of 4-inch tile pipe set in cement with top flush with ground. First reference station is center point of triangle on standard cement monument with top 10 inches below the surface of ground. Second reference station is center point of triangle on standard cement monument with top 6 inches above surface of ground.

References.—

	°	'	"	
"Wheat" (N $36^{\circ} 23'$ W).....	0	00	00	2½ miles.
Chimney in center of house.....	15	09	--	¾ mile.
SECOND REFERENCE STATION.....	97	43	35	26.22 meters.
FIRST REFERENCE STATION.....	98	52	30	11.29 meters.
Apple tree.....	152	00	--	200 yards.
Left chimney of house.....	180	19	--	¾ mile.
Near end of peak of roof of Marburger house.....	209	27	--	2¼ miles.
Left chimney of house.....	269	21	--	1¼ miles.
Nail in blaze in stump (30 inches diameter).....	250	49	--	5.01 meters.
Nail in blaze in tree (8 inches diameter).....	352	30	--	17.52 meters.

BRISCOE.

General locality.—Southeast shore of Patuxent River about ¼ mile northwest of St. Cuthbert Wharf. (See Chart No. 19.)

Immediate locality.—Observed station is in a cultivated field, about 20 feet above high water, 80 yards southwest of trees on bank, 50 yards southeast of a creek bed, 46 yards northwest of a clump of trees, 105 yards east of a corner of fence on road, and about 300 yards northeast of another fence with woods back of it. Cement monument marking reference station is 12.52 meters N $79^{\circ} 35'$ W of observed station.

Marks.—Observed station is a nail in a stub with top flush with ground and a subsurface mark of a standard cement monument with top buried 11 inches below the surface. Reference station is center of triangle on standard cement monument with top 5 inches above surface of ground.

References.—

	°	'	"	
"Hellen" (S $71^{\circ} 37'$ E).....	0	00	00	1½ miles.
Near corner of house.....	45	11	--	¾ mile.
Left end of peak of roof of barn.....	57	18	--	¾ mile.
Large two-forked tree.....	129	17	--	130 yards.
Corner of rail fence and tree.....	136	34	--	105 yards.
REFERENCE STATION.....	172	01	40	12.52 meters.
Large cherry tree other side of creek.....	195	00	--	68 yards.
Left chimney of house on opposite side with three dormer windows.....	304	54	--	1½ miles.
Cedar tree.....	308	59	--	80 yards.

HELLEN.

General locality.—Northeast shore of Patuxent River on east side of mouth of Hellen Creek. (See Chart No. 20.)

Immediate locality.—Observed station is at high-water mark on edge of grass and bushes, about 16 yards west-southwest of a bluff 15 feet high, and about 40 yards north-northwest of bluff at edge of water. Cement monument marking reference station is 12.45 meters N $75^{\circ} 14'$ E of observed station.

Marks.—Observed station was the center of a tile pipe with a subsurface mark of a green yeast-powder bottle but at date of publication these marks are reported to have been washed away. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Stump" (N 25° 42' W)-----	0	00	00	7½ mile.
Left chimney of Barrett house-----	8	54	-----	¾ mile.
Nail in blaze in tree-----	100	01	40	14.74 meters.
REFERENCE STATION-----	100	56	20	12.45 meters.
Near end of peak of roof of Marburger house-----	209	54	-----	1½ miles.
Mouth of Cuckold Creek-----	261	00	-----	1½ miles.
Chimney of Peterson house-----	355	14	-----	3 miles.

NAT.

General locality.—Southwest shore of Patuxent River about ½ mile above mouth of Cuckold Creek. (See Chart No. 20.)

Immediate locality.—Observed station is near edge of a cultivated field on a bluff of sand and gravel about 20 feet above high water, 4 feet east of edge of bluff, and 150 yards north of a rail fence. Cement monument marking reference station is 18.44 meters S 29° 47' W of observed station with top 8 inches below surface of ground.

Marks.—Observed station is center of 3-inch tile pipe embedded in cement. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hellen" (N 69° 29' E)-----	0	00	00	1¼ miles.
Near end of peak of roof of Marburger house on Point Patience-----	68	01	-----	1½ miles.
REFERENCE STATION-----	140	18	00	18.44 meters.
Large chimney on house-----	281	58	-----	3 miles.
Right chimney of house with two gable roofs-----	309	01	-----	2 miles.

TON.

General locality.—Eastern shore of Patuxent River about 1 mile northeast of Point Patience. (See Chart No. 20.)

Immediate locality.—Observed station is on a bluff about 15 feet above high water, 10 yards east from edge of bluff, 50 yards south-southwest of edge of a gully and a clump of trees, and about 220 yards west-northwest of a cherry tree 3½ feet in diameter. Cement monument marking reference station is 13.64 meters S 62° 29' E of observed station.

Marks.—Observed station is a spike set in cement. Reference station is center point of triangle on standard cement monument buried below surface 10 inches.

References.—

	°	'	"	
"Mill" (S 65° 00' W)-----	0	00	00	1¼ miles.
Chimney on far end of Wallace house-----	53	28	-----	1¾ miles.
Chimney on middle of roof on McCorry store-----	60	09	-----	2 miles.
Near end of peak of St. Cuthbert Wharf house-----	62	10	-----	2 miles.
Near end of peak of roof of Parran oyster watch house-----	83	03	-----	5½ miles.
Chimney on Peterson house-----	85	39	-----	3¾ miles.
Cemented chimney on near end of George old house-----	94	59	-----	1 mile.
Left chimney of Costen house-----	117	59	-----	½ miles.
Nail in blaze in tree-----	137	35	20	47.60 meters.
REFERENCE STATION-----	232	31	00	13.64 meters.
Left chimney of Marburger house-----	329	11	-----	¾ mile.

MILL.

General locality.—Southwest shore of Patuxent River about $\frac{1}{2}$ mile southeast of mouth of Cuckold Creek and $\frac{1}{2}$ mile northwest of Point Patience. (See Chart No. 20.)

Immediate locality.—Observed station is on a sand bluff about 20 feet above high water, 7 yards southwest of the edge of the bluff, 40 yards southeast of a fence and a line of cedar trees, and about 100 yards northwest of another fence at bottom of hill. Cement monument marking reference station is 13.76 meters S $28^{\circ} 14'$ W of observed station.

Marks.—Observed station is center point of 3-inch tile pipe embedded in cement. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Ton" (N $64^{\circ} 59'$ E).....	0	00	00	1 $\frac{1}{4}$ miles.
Nearest chimney of Marburger house on Point Patience.....	39	01	--	$\frac{3}{4}$ mile.
"Catholic Church Cross".....	43	03	40	2 miles.
"Methodist Episcopal Church Spire".....	49	23	30	2 miles.
Middle of portico of Judge Crane house....	82	22	--	1 mile.
Windmill near Dent house.....	136	47	--	$\frac{1}{2}$ mile.
REFERENCE STATION.....	143	14	40	13.76 meters.
Chimney on house among farm buildings ..	293	28	40	4 $\frac{1}{4}$ miles.
Left chimney on house with piazza.....	304	02	--	2 $\frac{3}{4}$ miles.
End of peak of roof of 2 $\frac{1}{2}$ -story house.....	323	31	--	1 $\frac{3}{4}$ miles.
Nearest chimney of cottage.....	338	17	--	2 miles.
Left chimney of house.....	340	19	--	2 miles.

BUR.

General locality.—East shore of Patuxent River, on northwest side of Point Patience, about $\frac{1}{4}$ mile northeast of its extreme end. (See Chart No. 20.)

Immediate locality.—Observed station is on sand and grass land, about 1 foot above high water, 12 yards southeast of high-water mark on one side of point, 36 yards northwest of high-water mark on other side of point, and about 300 yards northeast of extreme end of point. Cement monument marking reference station is 12.15 meters N $85^{\circ} 20'$ E of observed station.

Marks.—Observed station is a 3-inch tile pipe set in cement with top about 1 inch above the surface of the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Ton" (N $37^{\circ} 56'$ E).....	0	00	00	1 mile.
Left chimney of Marburger house.....	16	08	--	$\frac{1}{4}$ mile.
REFERENCE STATION.....	47	24	30	12.15 meters.
"Methodist Episcopal Church Spire".....	75	32	10	1 $\frac{3}{8}$ miles.
Middle gable of Judge Crane house.....	139	09	--	$\frac{1}{2}$ mile.
Nail in blaze in pine tree (8 inches diameter).....	162	40	10	25.94 meters.
Square chimney on Dent house.....	228	30	--	$\frac{3}{4}$ mile.
Chimney on house.....	268	52	--	1 $\frac{5}{8}$ miles.
Left chimney of house.....	346	39	--	1 $\frac{1}{2}$ miles.
Right chimney of house.....	358	31	--	1 $\frac{1}{2}$ miles.

NEW.

General locality.—Northeast side of Patuxent River, about $\frac{3}{4}$ mile east of Point Patience and about 1 $\frac{1}{4}$ miles northwest of Sandy Point. (See Chart No. 20.)

Immediate locality.—Observed station is about 20 feet above high-water mark in the middle of a cultivated field on Strathmore farm, about 230 yards northeast of shore of Patuxent River, about 82 yards southeast of a creek, about 162 yards northwest of a small creek or ditch, 230 yards northeast of a large oak tree, and 250 yards north of another large oak tree.

Marks.—Observed station is center point of triangle on standard cement monument with top 11 inches below the surface of the ground. *

References.—

	°	'	"	
"Ben" (S 2° 10' E).....	0	00	00	2 miles.
Chimney on flat-roof house.....	6	59	--	1 3/4 miles.
Chimney on main part of a house on Town Creek.....	27	11	--	1 1/4 miles.
Oak tree about 18 inches diameter on edge of field.....	43	54	--	227 yards.
Right tangent of Spencers wharf.....	56	04	--	1 mile.
Corner of field.....	67	00	--	310 yards.
Exposed chimney on left of house.....	67	36	--	1 1/2 miles.
Left chimney on house.....	88	57	--	1 1/2 miles.
Corner of field.....	206	00	--	240 yards.
Corner of field.....	258	00	--	300 yards.
Silver-tipped tower on Philip Vale house..	307	08	20	1/2 mile.
Oak at edge of field.....	343	35	--	300 yards.

CATHOLIC CHURCH CROSS.

General locality.—Southeast side of Patuxent River, about halfway to Back Creek and 3/4 mile northwest of Solomons wharf. (See Chart No. 20.)

Immediate locality.—Observed station is on Catholic Church, known as St. Marys Star of the Sea, located in small village of Johnstown on mainland near Solomons Island, and about 250 yards north of causeway to Solomons Island.

Marks.—Observed station is center of cross on bell cupola.

References.—None necessary.

CABLE.

General locality.—Southwest shore of Patuxent River, on east side of entrance to Kings Creek, and about 3/4 mile west of Town Point. (See Chart No. 20.)

Immediate locality.—Observed station is on pasture land near the end of high land at the beginning of a long, low peninsula which almost closes the mouth of Kings Creek, about 30 feet above high-water mark, about 20 yards south of edge of bank on river side, about 15 yards east northeast of edge of bank on creek side, 38 yards southeast of extreme edge of top of bank, and 30 yards west of a persimmon tree.

Marks.—Observed station is center point of triangle on standard cement monument buried with top 10 inches below the surface of ground.

References.—

	°	'	"	
"Bur" (N 35° 17' E).....	0	00	00	3/4 mile.
Left chimney of Marburger house near Point Patience.....	3	25	--	3/4 mile.
"Catholic Church Cross".....	43	59	--	1 3/4 miles.
"Methodist Episcopal Church Spire".....	52	29	--	1 3/4 miles.
Left chimney of Judge Crane house.....	55	44	--	1/2 mile.
Nail in blaze of tree (18 inches diameter)...	179	22	20	19.24 meters.
Nail in blaze in red cedar tree (3 inches diameter).....	236	25	--	16.80 meters.
Nail in blaze in persimmon tree.....	283	52	10	26.22 meters.
Right chimney on Fenner Lee house.....	284	14	--	3/8 mile.
Left chimney of house.....	302	24	--	1/2 mile.

TOWN.

General locality.—Southwestern shore of Patuxent River, on Town Point, about 3/4 mile southeast of Point Patience. (See Chart No. 20.)

Immediate locality.—Observed station is about 20 feet above high-water mark, 9 yards west of edge of bluff, 3 yards south of edge of bluff, 10 yards southeast of extreme edge of high land, 3 yards south of a rail fence, and 2 yards north of cultivated land.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	o	'	"	
"Back".....	0	00	00	1/4 mile.
"Catholic Church Cross".....	8	58	20	1 mile.
"Methodist Church Spire".....	25	41	20	3/4 mile.
Cupola on Files store.....	29	11	--	3/4 mile.
Nearest chimney on Webster house.....	43	06	--	1 1/4 miles.
Right end of roof of 2 1/4-story building at Pearsons.....	67	56	--	3 miles.
Near corner of tower on Hodgdon house....	93	01	--	2 3/8 miles.
Chimney on old house.....	108	18	--	1 3/8 miles.
Chimney on house.....	142	53	--	1 mile.
Left chimney on Lee house.....	227	04	--	1 1/2 miles.
Marburger house.....	281	00	--	3/4 mile.

CRANE.

General locality.—Southwest side of Patuxent River, on northeast side of Town Creek, about 1/4 mile southwest of Town Point. (See Chart No. 20.)

Immediate locality.—Observed station is in a cultivated field on Judge Crane farm, about 8 feet above high-water mark, 58 yards east northeast of Town Creek, 105 yards west of a fence, 115 yards west-northwest of a large cherry tree, 200 yards southeast of several detached buildings, and 20 yards east of top of a ravine.

Marks.—Observed station is center point of triangle on standard cement monument with top 10 inches below ground.

<i>References.</i> —	o	'	"	
"New" (N 36° 51' E).....	0	00	00	1 mile.
"Catholic Church Cross".....	29	25	--	1 1/4 miles.
Stack on ice plant.....	37	25	--	1 1/4 miles.
Methodist Episcopal Church Tower.....	42	15	--	1 1/4 miles.
Cherry tree (4 feet diameter).....	71	26	--	115 yards.
Canning-house stack.....	157	27	--	1/4 mile.
House on point.....	185	20	--	1/4 mile.
Chimney on house.....	244	30	--	3/4 mile.
Lightning rod on cupola of Judge Crane barn.....	277	01	30	1/4 mile.
Right tangent to St. Cuthbert wharf.....	300	08	--	2 3/4 miles.
Near end of peak of roof of Marburger house.....	320	49	--	7/8 mile.
Middle of gateway.....	355	23	--	1/8 mile.
Oak tree on opposite shore of Patuxent River.....	359	16	50	1 mile.

M. E. CHURCH (SOLOMONS).

General locality.—Northeastern shore of Patuxent River, on upper end of Solomons Island, about 1/2 mile northwest of Sandy Point. (See Chart No. 20.)

Immediate locality.—Observed station is on Methodist Church at upper end of Solomons Island near beginning of causeway to mainland.

Marks.—Observed station is tip of pyramidal tower on Methodist Church.

References.—None necessary.

K. OF P. FLAGSTAFF (SOLOMONS).

General locality.—Northeastern side of Patuxent River, on Solomons Island, in the town of Solomons. (See Chart No. 20.)

Immediate locality.—Observed station is on flagstaff in front of Knights of Pythias Building.

Marks.—Observed station is center of flagstaff at about the same height as roof of the K. of P. Hall.

References.—None necessary.

SAND.

General locality.—Northeastern side of Patuxent River on Sandy Point on extreme southern point of Solomons Island. (See Chart No. 20.)

Immediate locality.—Observed station is on pasture land about 5 feet above high water, 30 yards north of extreme point of planking protecting the shore from washing, 15 yards northeast of the extreme edge of sand and grass line, and about 13 yards east of top of bank. Cement monument marking reference station is 13.64 meters N 2° 19' E of observed station.

Marks.—Observed station is nail in southwest side of a 6-inch pile driven into ground with top 6 inches above the surface. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Drum Point Light" (N 83° 57' E)-----	0	00	00	2 miles.
Right tangent of woods on Hog Point.	14	36	--	3 miles.
Left end of peak of roof on 2 1/4-story building at Pearsons.	51	03	--	2 miles.
Chimney on storehouse at Millstone.	74	18	--	1 3/4 miles.
Near point of gable of Hodgdon large house with square tower.	93	54	--	1 1/2 miles.
Near end of peak of roof of Marburger house.	225	22	--	1 3/4 miles.
Warren house opposite Johnson store.	261	22	--	1/4 mile.
REFERENCE STATION.	278	22	10	13.64 meters.
"K. of P. Flagstaff"-----	291	58	--	1/4 mile.
Right chimney of Dr. Marsh house.	320	38	--	1/8 mile.
"Bareda House Cupola"-----	347	48	30	1 1/2 miles.

FISHSTACK.

General locality.—Northeastern side of Patuxent River on northeastern side of entrance to Mill and Back creeks. (See Chart No. 20.)

Immediate locality.—Observed station is on mainland on fish fertilizer factory located on opposite side of creek from Solomons Island.

Marks.—Observed station is center of smokestack on fish factory.

References.—None necessary.

BON.

General locality.—North shore of Patuxent River about 1 1/4 miles west-northwest of Drum Point Light and about 1/2 mile east-northeast of Solomons Island. (See Chart No. 20.)

Immediate locality.—Observed station is on cultivated land, about 5 feet above high water, about 7 yards north of shore, about 90 yards southeast of a 1 1/2-story house on land 10 feet higher than station, and about 75 yards south of a 1 1/2-story brick house. Cement monument marking reference station is 0.67 meters N 45° 29' E of observed station.

Marks.—Observed station is an inverted nail in center of cement in a 6-inch tile pipe with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Drum Point Light" (S 73° 43' E)-----	0	00	00	1 1/4 miles.
Smoke pipe on oyster watch house.	33	32	--	1/2 mile.
Left end of peak of roof on 2 1/2-story building at Pearsons.	52	06	--	2 1/4 miles.
Left end of peak of roof on house with piazza.	82	29	--	2 1/2 miles.

Near point of roof of Hodgdon house with square tower.....	89	14	00	2¼ miles.
Chimney on end of house.....	133	57	00	¾ mile.
Left chimney on Weems house.....	159	37	00	¼ mile.
Right chimney on wooden house.....	224	01	00	90 yards.
Left side of chimney on brick house.....	249	54	00	75 yards.
REFERENCE STATION.....	299	12	00	0.67 meters.
Near end of peak of house on bluff between trees.....	336	50	00	½ mile.
"Bareda House Cupola".....	347	06	00	¾ mile.

BAREDA HOUSE CUPOLA.

General locality.—North side of Patuxent River about ½ mile northwest of Drum Point Light. (See Chart No. 20.)

Immediate locality.—Observed station is on Bareda House which is a large 3-story square mansion with square cupola with three windows on each side and a porch all around ground floor, located about 100 yards back from shore on high land.

Marks.—Observed station is center of ornamental design of four brackets on center of cupola.

References.—None necessary.

DRUM POINT LIGHT.

General locality.—Northeastern side of entrance of Patuxent River and a short distance off shore from Drum Point. (See Chart No. 20.)

Immediate locality.—Observed station is on a screw pile structure known as Drum Point Light-House.

Marks.—Observed station is center of black lantern on Drum Point Light-House.

Reference.—

"Cedar Point Light" (S 64° 33' E).....	0	00	00	3¼ miles.
--	---	----	----	-----------

BEN.

General locality.—Southwestern shore of Patuxent River about 1 mile south-southwest of Sandy Point and 1¼ miles south-southeast of Town Point. (See Chart No. 20.)

Immediate locality.—Observed station is on a clay and sand bluff in a cultivated field, about 20 feet above high-water mark, about 10 feet west of edge of bank, 3 feet south of point covered with scrub pines, about 15 yards northeast of one edge of plateau, 10 yards southeast of another edge of plateau, about 65 yards north of point of woods, and 10 yards south of cut in bank which is washing rapidly. Cement monument marking reference station is 8.42 meters S 56° 15' W of station.

Marks.—Observed station is nail in cement in 6-inch tile pipe with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

"Drum Point Light" (N 68° 07' E).....	0	00	00	2¾ miles.
Left tangent of trees on Hog Point.....	16	21	00	3¾ miles.
Near end of peak of roof of large 2¼-story building at Pearsons.....	39	36	00	2¼ miles.
Near piazza post of Millstone Hotel.....	56	11	00	1¾ miles.
Chimney of Craddock house.....	60	28	00	1¼ miles.
Chimney on end of cabin.....	97	24	00	200 yards.
Tall pine tree.....	138	35	00	50 yards.
REFERENCE STATION.....	168	08	00	8.42 meters.
Nail in blaze in pine tree (4 inches diameter).....	176	33	50	7.79 meters.
Nail in blaze in pine tree (4 inches diameter).....	223	40	40	8.77 meters.

Nail in blaze in pine tree (4 inches diameter)-----	236	39	--	2.07 meters.
Near end of peak of roof of Marburger house-----	272	12	--	2 miles.
"Catholic Church Cross"-----	304	54	40	1½ miles.
"Bareda House Cupola"-----	350	34	40	2½ miles.

CRADDOCK.

General locality.—Southern shore of Patuxent River, about 2½ miles south-southeast of Drum Point Light and ¼ mile west of Millstone Landing. (See Chart No. 20.)

Immediate locality.—Observed station is on lawn about 15 feet above high-water mark, about 10 yards south from top edge of bank, 15 yards from bottom edge of bank and fence, 30 yards east of extreme edge of point, 30 yards northeast of trees along shore of pond, about 110 yards northwest of Craddock house and several outbuildings among poplar trees, 50 yards east of fence, and 70 yards west of driveway to house.

Marks.—Observed station is center point of triangle on standard cement monument, with top flush with lawn.

References.—

	o	'	"	
"Drum Point Light" (N 37° 15' E)-----	0	00	00	2½ miles.
Left tangent of woods on Carroll Point-----	21	52	--	1¾ miles.
Near end of peak of roof of 2½-story building at Pearsons-----	42	25	--	1¼ miles.
Chimney on hotel at Millstone-----	64	56	--	½ mile.
Cottonwood tree (14 inches diameter)-----	68	54	--	80 yards.
Chimney on roof of Craddock 2½-story house-----	95	27	--	110 yards.
Nail in stump (14 inches diameter)-----	309	25	50	5.35 meters.
"Fishstack"-----	317	30	50	2 miles.

CARROLL 2.

General locality.—South side of Patuxent River, about 1 mile south-southwest of Hog Point and about 1 mile south of Drum Point Light. (See Chart No. 20.)

Immediate locality.—Observed station is on a sandy clay bluff in a cultivated field, about 50 feet above high-water mark, 4 feet south of top edge of bluff, 180 yards east of trees and ravine beyond cultivated field, 60 yards west of trees and ravine beyond cultivated field, 300 yards north of large square chimney on old-fashioned farmhouse, and 250 yards north of large tree to right of farmhouse. Cement monument marking reference station is 13.32 meters S 54° 30' W of observed station. Another reference station is a nail in the east side of cement in a 6-inch tile pipe 14.64 meters S 13° 20' E of observed station and on range with Drum Point Light.

Marks.—Observed station is center of 5-inch tile pipe with top 8 inches below surface of ground. Reference station is nail in cement on east side of a 6-inch tile pipe with top 6 inches below surface of ground. Another reference station is center point of triangle on standard cement monument with top 9 inches below surface of ground.

References.—

	o	'	"	
"Drum Point Light" (N 13° 20' W)-----	0	00	00	1 mile.
Left tree on Hog Point-----	81	59	40	1 mile.
Right of bushes at edge of ravine-----	142	00	--	75 yards
Tree (12 inches diameter)-----	164	48	--	½ mile.
REFERENCE STATION (tile)-----	179	59	45	14.64 meters
Tree (20 inches diameter)-----	183	25	--	½ mile.
Chimney of Susquehanna farmhouse-----	192	10	--	300 yards.
Large tree-----	199	08	--	250 yards.
REFERENCE STATION (monument)-----	247	50	00	13.32 meters.
Right chimney of Fenner Lee house-----	302	45	--	4½ miles.

Center of four-sided roof on Doctor Marsh	°	'	"	
house	307	58	--	2 1/4 miles.
"Catholic Church Cross"	315	32	00	2 3/4 miles.
Silver tip on tower of Vale house	316	15	30	3 miles.
Chimney of Bowen house	327	16	--	2 miles.
"Bareda House Cupola"	348	44	00	1 1/2 miles.

HOG 2.

General locality.—Southern shore of entrance to Patuxent River on Hog Point, about 1 1/8 miles west-northwest of Cedar Point Light. (See Chart No. 20.)

Immediate locality.—Observed station is on a sand beach at high-water mark, 30 yards northwest of point of woods, and 200 yards north-northeast of nearest shore of Parsons Creek. Cement monument marking reference station is 33.35 meters S 42° 22' E of observed station on a point of high land.

Marks.—Observed station is nail set in cement in a 6-inch tile pipe, with top 1 foot below the surface. Reference station is center point of triangle on standard cement monument.

References.—	°	'	"	
"Drum Point Light" (N 60° 44' W)	0	00	00	1 1/2 miles.
"Bareda House Cupola"	2	44	50	1 1/2 miles.
Chimney of cabin on opposite shore	22	20	--	1 1/2 miles.
Tangent of Little Cove Point	71	56	--	3 1/2 miles.
"Cedar Point Light"	173	31	40	2 miles.
REFERENCE STATION	198	21	50	33.35 meters.
Nail in blaze in pine tree	201	03	--	29.58 meters.
Cabin on opposite side of Parsons Creek	243	05	--	3/4 mile.
Chimney on Susquehanna farmhouse	301	04	--	1 mile.
"M. E. Church" (Solomons)	346	16	40	3 1/2 miles.
Steeple of Vale house at Avondale	350	55	--	3 1/2 miles.

PAT.

General locality.—Western shore of Chesapeake Bay on Little Cove Point, about 1 1/4 miles south by west of Cove Point Light. (See Chart No. 20.)

Immediate locality.—Observed station is on the highest point of a thickly wooded bluff, about 75 feet above high-water mark, 4 yards west of edge of bluff, and 15 yards southwest of extreme point. Cement monument marking reference station is 24.57 meters S 71° 26' W of observed station.

Marks.—Observed station is a 3-inch round stake set in cement, with top about 4 inches above surface of ground. Reference station is center point of triangle on standard cement monument.

References.—	°	'	"	
"Cedar Point Light" (S 13° 54' E)	0	00	00	4 1/2 miles.
Near piazza post of house	14	52	--	4 miles.
REFERENCE STATION	85	20	00	24.57 meters.
Spike in blaze in tree (5 inches diameter)	94	51	--	6.54 meters.
Spike in blaze in tree (5 inches diameter)	114	10	--	3.42 meters.
Spike in blaze in tree (17 inches diameter)	138	54	--	12.26 meters.
Spike in blaze in tree (13 inches diameter)	181	46	--	5.50 meters.
"Cove Point Light"	203	25	30	1 3/4 miles.
"Hoopers Island Light"	327	58	10	10 1/4 miles.

CEDAR POINT LIGHT.

General locality.—Western shore of Chesapeake Bay on Cedar Point, 3 1/4 miles east-southeast of Drum Point Light and 6 miles south by east of Cove Point Light. (See Chart No. 20.)

Immediate locality.—Observed station is on a brick dwelling known as Cedar Point Light-House.

Marks.—Observed station is center point of lantern on Cedar Point Light-House.

Reference.—	°	'	"	
"Cove Point Light" (N 7° 16' W)	0	00	00	6 miles.

CAIN.

General locality.—Western shore of Chesapeake Bay, about $1\frac{5}{8}$ miles southwest of Cedar Point Light. (See Chart No. 20.)

Immediate locality.—Observed station is on a bank about 5 feet above high-water mark, about 20 yards northwest of ordinary high water, 5 yards northwest of extreme high water, 100 yards southwest of old-fashioned house among several large trees, and about 250 yards below small wharf and canning house. Cement monument marking reference station is 6.45 meters N $16^{\circ} 56'$ E of observed station.

Marks.—Observed station is a nail set in cement in a 3-inch pipe with top about 2 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cedar Point Light" (N $46^{\circ} 45'$ E)-----	0	00	00	1 $\frac{5}{8}$ miles.
Steeple on church-----	28	26	--	9 $\frac{1}{2}$ miles.
"Hoopers Island Light"-----	56	28	40	7 $\frac{3}{4}$ miles.
"Point No Point Light"-----	106	05	--	11 $\frac{3}{4}$ miles.
Right chimney on Tarleton house-----	135	12	--	3 $\frac{1}{4}$ miles.
Near end of peak of 2-story house-----	148	41	--	1 $\frac{3}{4}$ miles.
REFERENCE STATION-----	330	10	40	6.45 meters.
Near corner of house-----	335	13	--	100 yards.
Aspen tree in house yard-----	339	35	50	100 yards.

DESERT.

General locality.—Western shore of Chesapeake Bay, about 3 miles south-southwest of Cedar Point Light. (See Chart No. 20.)

Immediate locality.—Observed station is on sand and grass land, about 25 yards west from ordinary high-water mark, about at level of extreme high-water mark, 40 yards south of a fence, 10 yards east of a fence, 45 yards south of a creek, about 50 yards north of point of pine woods, and about 300 yards east of woods across marsh. Cement monument marking reference station is 5.29 meters N $31^{\circ} 24'$ W of observed station.

Marks.—Observed station is a 4-inch tile pipe projecting about 2 inches above surface of sand. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cedar Point Light" (N $34^{\circ} 05'$ E)-----	0	00	00	3 miles.
Steeple on church-----	34	19	40	10 $\frac{1}{2}$ miles.
"Hoopers Island Light"-----	59	08	40	8 miles.
"Point No Point Light"-----	113	27	30	11 miles.
Near end of peak of roof of Tarleton house-----	135	09	--	2 miles.
Point of woods-----	146	00	--	50 yards.
Nail in blaze in pine tree (14 inches diameter)-----	294	30	40	7.62 meters.
REFERENCE STATION-----	294	30	40	5.29 meters
Chimney on near end of house-----	336	38	--	$\frac{1}{2}$ mile.
Large square chimney on larger of two houses-----	344	48	--	1 mile.

BOUNDARIES OF OYSTER BARS.

EXPLANATION.

The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the designation and employment by the Department of Commerce and Labor of such officers, experts, and other technically qualified persons "as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland." The oyster laws of Maryland provide that the Maryland Shell Fish Commissioners, with the aid of such persons as may be designated by the Government, shall proceed "to have laid out, surveyed, and designated on the said charts the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts." The oyster laws of Maryland also provide in another section that there shall "be made a true and accurate survey of the natural oyster beds, bars, and rocks * * * with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey."

Under the provisions of the laws quoted above the State of Maryland, in cooperation with the Department of Commerce and Labor, must define the boundaries of the natural oyster bars "as accurately as practicable" and also "with reference to fixed and permanent objects on the shore, giving courses and distances." The requirement of "as accurately as practicable" is easily fulfilled by definition of the location of the corners of the oyster bars by latitude and longitude. In fact, this method is probably the most satisfactory and accurate one that could be used for all purposes of legal definition or for relocation of the oyster-bar boundaries by competent engineers. Therefore the additional requirement of "giving courses and distances" is superfluous and is only fulfilled in the published definitions on account of the specific provisions of the law making it compulsory. This part of the description of boundaries has involved an immense amount of extra computations in order to prevent technical discrepancies between the latitude and longitude of a corner of an oyster bar and its distance and bearing from objects on shore of known latitude and longitude without adding anything to the accuracy and very little to the convenience of practical use of the descriptions of the oyster-bar boundaries.

As provided by law the boundaries of the oyster bars are all straight lines, but in the work already completed they have inclosed areas of all shapes from triangles to complicated 14-sided figures, and of all sizes from 4 acres to 7,548 acres. The sides have varied in length from 93 to 7,529 yards, and in some cases the corners of the boundaries have been practically at the triangulation stations from which they are located; while in other instances they were over 13,600 yards from the landmarks most available for the purpose of fixing their position.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made and the magnitude of the work with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and great importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the Commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and future.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in each county.

Title.—At the top of each tabular form is given the legal name of the oyster bar to be described, and the one by which it is known and designated in the published oyster records and on the oyster charts. The adopted name of the oyster bar is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission; and when there was no local name in common use a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the oyster bar was located.

Underneath the name, in parenthesis, is given the general locality of the oyster bar and the serial number of the "Maryland Oyster Chart" on which its legal boundaries are shown.^a

First column.—This column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar; but where a corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars only the number of the corner of the oyster bar being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definition of the location of the corners, and should be considered as final in case of a dispute arising from discrep-

^aThese charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

ancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the Survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"^a and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"^b gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars: One, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

^a The mean magnetic variation for Calvert County was 5° 50' west of north in 1909 and increasing at the rate of 3' yearly.

^b Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

(1) *Triangulation*.—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant, the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "Hog Point" bar, which is the first one described in this publication, and assume that "Corner No. 1" is to be examined as to its position. The angle between the two landmarks "Hog Point" and "Beach," as determined from right to left from the forward bearings from this corner is $67^{\circ} 35'$ and the angle between "Beach" and "Ill 2" is $17^{\circ} 16'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the

point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant, then the other, until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question. *

If the engineer possesses two sextants and a protractor this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic locations of points are attained; in fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the Commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass, and will be of special use to the State Fishery Force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer takes compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,^a and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks for which the bearings are published have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used by getting their bearings directly from the chart by parallel rulers or a protractor and then applying them in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column

^a The mean magnetic variation for Calvert County is 5° 50' west of north in 1909 and increasing at the rate of 3' yearly.

opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fifth column of the tables opposite the "corner" in question, and the direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range-lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parenthesis alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit, and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

HOG POINT.

(Chesapeake Bay—Chart No. 16.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 42 00.00	76 29 42.57	N 65 49 W	S 65 50 E	3489	Hog Point (Holland 3). Beach. Ill 2.
			S 46 36 W	N 46 35 E	4709	
			S 29 20 W	N 29 19 E	6294	
2	38 42 00.00	76 30 38.41	N 50 04 W	S 50 04 E	2227	Hog Point (Holland 3). Beach. Ill 2.
			S 31 01 W	N 31 00 E	3776	
			S 16 19 W	N 16 19 E	5717	
3	38 42 39.59	76 30 41.04	N 86 42 W	S 86 43 E	1640	Hog Point (Holland 3). Beach. Ill 2.
			S 22 19 W	N 22 18 E	4941	
			S 12 42 W	N 12 41 E	6994	
4	38 42 30.67	76 29 56.13	N 82 02 W	S 82 03 E	2852	Hog Point (Holland 3). Beach. Ill 2.
			S 35 39 W	N 35 38 E	5255	
			S 22 41 W	N 22 40 E	7068	

UPPER STEPS.

(Chesapeake Bay—Chart No. 16.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 40 31.72	76 31 22.80	N 6 56 W S 71 26 W S 9 47 W	S 6 56 E N 71 26 E N 9 47 E	4429 815 2547	Hog Point (Holland 3) Beach. Ill 2.
2	38 41 07.90	76 31 23.42	N 9 14 W S 27 03 W S 6 22 W	S 9 14 E N 27 03 E N 6 22 E	3228 1661 3753	Hog Point (Holland 3). Beach. Ill 2.
3	38 41 07.81	76 30 43.13	N 26 23 W S 50 58 W S 21 41 W	S 26 24 E N 50 58 E N 21 40 E	3561 2344 4011	Hog Point (Holland 3). Beach. Ill 2.
4	38 40 32.14	76 30 41.83	N 20 13 W S 81 37 W S 30 59 W	S 20 13 E N 81 36 E N 30 59 E	4681 1876 2945	Hog Point (Holland 3). Beach. Ill 2.

LOWER STEPS.

(Chesapeake Bay—Chart No. 16.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 37 54.20	76 30 09.22	N 40 20 W S 47 33 W S 9 30 W	S 40 21 E N 47 33 E N 9 30 E	3676 1590 2967	Ill 2. Plum 3. Pier.
2	38 38 22.74	76 31 01.84	N 17 58 W N 28 13 W S 6 09 E	S 17 58 E S 28 14 E N 6 08 W	4299 2088 2047	Beach. Ill 2. Plum 3.
3	38 39 03.00	76 31 10.50	N 21 53 W N 57 35 W S 7 31 E	S 21 53 E S 57 35 E N 7 31 W	2944 898 3422	Beach. Ill 2. Plum 3.
4	38 39 03.40	76 30 40.60	N 34 46 W N 73 11 W S 5 53 W	S 34 47 E S 73 12 E N 5 53 E	3310 1619 3346	Beach. Ill 2. Plum 3.
5	38 38 00.00	76 29 21.95	N 54 19 W S 62 23 W S 29 09 W	S 54 20 E N 62 22 E N 29 08 E	4467 2735 3574	Ill 2. Plum 3. Pier.

Survey of Oyster Bars, Calvert County, Md.

PLUM POINT.

(Chesapeake Bay—Charts Nos. 16 and 17.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 35 08.99	76 29 30.18	N 29 56 W	S 29 56 E	3052	Pier.
			S 36 34 W	N 36 33 E	2896	Pen.
			S 28 09 W	N 28 08 E	5177	Patch.
2	38 35 23.36	76 30 13.24	N 10 03 W	S 10 04 E	2194	Pier.
			S 14 27 W	N 14 27 E	5214	Patch.
			S 11 45 W	N 11 45 E	2871	Pen.
3	38 37 54.20	76 30 09.22	N 40 20 W	S 40 21 E	3676	Ill 2.
			S 47 33 W	N 47 33 E	1590	Plum 3.
			S 9 30 W	N 9 30 E	2967	Pier.
4	38 38 00.00	76 29 21.95	N 54 19 W	S 54 20 E	4467	Ill 2.
			S 62 23 W	N 62 22 E	2735	Plum 3.
			S 29 09 W	N 29 08 E	3574	Pier.
5	38 37 25.92	76 28 39.97	N 51 36 W	S 51 38 E	6048	Ill 2.
			S 88 05 W	N 88 03 E	3536	Plum 3.
			S 55 20 W	N 55 19 E	3467	Pier.
6	38 35 46.04	76 28 39.80	N 63 57 W	S 63 58 E	3178	Pier.
			S 40 33 W	N 40 32 E	4705	Pen.
			S 33 00 W	N 32 59 E	6932	Patch.

DADDIE DARE.

(Chesapeake Bay—Chart No. 17.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 33 16.42	76 30 01.31	N 31 30 W	S 31 30 E	1724	Pen.
			S 64 35 W	N 64 34 E	1791	Patch.
			S 24 08 W	N 24 08 E	3575	Parker.
2	38 34 14.52	76 30 39.37	S 12 36 W	N 12 36 E	2795	Patch.
			S 12 22 E	N 12 22 W	501	Pen.
			N 3 56 E	S 3 56 W	4493	Pier.
3	38 34 54.39	76 30 39.16	S 8 36 W	N 8 35 E	4118	Patch.
			S 3 10 E	N 3 10 W	1836	Pen.
			N 5 38 E	S 5 38 W	3153	Pier.
4	38 34 33.11	76 29 58.02	N 11 31 W	S 11 32 E	3935	Pier.
			S 41 30 W	N 41 30 E	1491	Pen.
			S 26 57 W	N 26 56 E	3762	Patch.
5	38 33 40.94	76 29 34.95	N 68 05 W	S 68 06 E	1722	Pen.
			S 55 26 W	N 55 25 E	2812	Patch.
			S 27 51 W	N 27 50 E	4625	Parker.

GOVERNORS RUN.

(Chesapeake Bay—Charts Nos. 17 and 18.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 30 13.36	76 29 52.52	N 30 13 W	S 30 13 E	3368	Parker.
			S 35 28 W	N 35 28 E	328	Run.
			S 18 47 E	N 18 46 W	3657	Poplar.
2	38 31 58.17	76 29 50.96	N 45 20 W	S 45 21 E	2660	Patch.
			S 70 15 W	N 70 14 E	1845	Parker.
			S 3 29 W	N 3 29 E	3808	Run.
3	38 31 58.03	76 29 13.54	N 56 58 W	S 56 59 E	3439	Patch.
			S 77 13 W	N 77 12 E	2796	Parker.
			S 17 51 W	N 17 51 E	3988	Run.
4	38 31 16.41	76 29 02.58	N 44 04 W	S 44 05 E	4563	Patch.
			N 75 25 W	S 75 27 E	3118	Parker.
			S 32 19 W	N 32 18 E	2831	Run.
5	38 31 01.16	76 29 38.60	N 30 20 W	S 30 20 E	4394	Patch.
			N 57 49 W	S 57 49 E	2439	Parker.
			S 16 34 W	N 16 34 E	1955	Run.
6	38 30 18.02	76 29 40.77	N 36 04 W	S 36 05 E	3407	Parker.
			S 49 47 W	N 49 47 E	656	Run.
			S 13 27 E	N 13 29 W	3722	Poplar.

EMANUEL.

(Chesapeake Bay—Charts Nos. 17 and 18.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 28 19.22	76 28 25.90	N 34 45 W	S 34 46 E	4360	Run.
			N 70 56 W	S 70 56 E	1184	Poplar.
			S 32 20 E	N 32 20 W	2596	Flag Pond.
2	38 30 13.36	76 29 52.52	N 30 13 W	S 30 13 E	3368	Parker.
			S 35 28 W	N 35 28 E	328	Run.
			S 18 47 E	N 18 46 W	3657	Poplar.
3	38 30 18.02	76 29 40.77	N 36 04 W	S 36 05 E	3407	Parker.
			S 49 47 W	N 49 47 E	656	Run.
			S 13 27 E	N 13 29 W	3722	Poplar.
4	38 30 35.16	76 29 01.32	N 54 30 W	S 54 31 E	3748	Parker.
			S 57 04 W	N 57 04 E	1843	Run.
			S 2 27 W	N 2 27 E	4202	Poplar.
5	38 28 53.66	76 28 01.74	N 52 14 W	S 52 15 E	3953	Run.
			S 66 15 W	N 66 14 E	1923	Poplar.
			S 12 34 E	N 12 34 W	3437	Flag Pond.

FLAG POND.

(Chesapeake Bay—Chart No. 18.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 24 51.50	76 24 49.59	N 45 57 W	S 45 59 E	4058	Wilson 2.
			N 85 35 W	S 85 35 E	210	Point of Rocks.
			S 41 39 E	N 41 41 W	4564	Cove Point Light.
2	38 25 18.03	76 25 24.78	S 39 30 E	N 39 30 W	1138	Point of Rocks.
			N 56 55 E	S 56 58 W	10684	Travers 2.
			N 45 50 W	S 45 51 E	2766	Wilson 2.
3	38 25 33.97	76 25 40.16	S 38 39 E	N 38 38 W	1813	Point of Rocks.
			N 60 30 E	S 60 33 W	10755	Travers 2.
			N 48 37 W	S 48 37 E	2101	Wilson 2.
4	38 26 04.98	76 26 19.20	S 41 22 E	N 41 22 W	3280	Point of Rocks.
			N 67 45 E	S 67 49 W	11230	Travers 2.
			N 57 35 W	S 57 35 E	641	Wilson 2.
5	38 26 23.49	76 26 48.62	S 40 29 E	N 40 29 W	370	Wilson 2.
			N 72 01 E	S 72 05 W	11749	Travers 2.
			N 34 52 W	S 34 53 E	2082	Flag Pond.
6	38 26 53.57	76 26 51.50	N 58 04 W	S 58 05 E	1312	Flag Pond.
			S 13 41 E	N 13 41 W	1333	Wilson 2.
			S 36 25 E	N 36 24 W	5095	Point of Rocks.
7	38 27 01.36	76 26 35.34	N 74 22 W	S 74 23 E	1600	Flag Pond.
			S 4 08 W	N 4 08 E	1562	Wilson 2.
			S 30 45 E	N 30 44 W	5076	Point of Rocks.
8	38 26 32.14	76 25 46.03	N 63 34 W	S 63 35 E	3183	Flag Pond.
			S 68 03 W	N 68 02 E	1531	Wilson 2.
			S 20 52 E	N 20 53 W	3614	Point of Rocks.
9	38 26 06.70	76 25 54.97	N 48 57 W	S 48 58 E	3465	Flag Pond.
			N 76 27 W	S 76 27 E	1217	Wilson 2.
			S 31 11 E	N 31 11 W	2945	Point of Rocks.
10	38 24 54.58	76 24 44.12	N 48 24 W	S 48 25 E	4094	Wilson 2.
			S 76 07 W	N 76 07 E	365	Point of Rocks.
			S 39 25 E	N 39 24 W	4548	Cove Point Light.

SPOUT.

(Upper Patuxent River—Chart No. 19.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 30 42.61	76 39 57.79	N 69 04 W	S 69 04 E	792	City.
			S 60 58 W	N 60 57 E	1391	Indian.
			S 7 32 E	N 7 32 W	348	Hallowing.
2	38 30 45.02	76 40 05.13	N 69 42 W	S 69 42 E	581	City.
			S 53 28 W	N 53 28 E	1269	Indian.
			S 29 23 E	N 29 23 W	489	Hallowing.
3	38 30 53.38	76 39 57.79	N 26 50 W	S 26 51 E	1594	Teague.
			S 83 48 W	N 83 48 E	744	City.
			S 3 51 E	N 3 51 W	710	Hallowing.
4	38 30 50.86	76 39 49.62	N 31 54 W	S 31 54 E	1772	Teague.
			N 89 43 W	S 89 44 E	956	City.
			S 15 20 W	N 15 20 E	646	Hallowing.

HOLLAND POINT (CALVERT COUNTY).

(Upper Patuxent River—Chart No. 19.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 30 12.18	76 40 15.63	S 52 45 E	N 52 45 W	943	Dwarf.
			N 37 20 E	S 37 20 W	856	Hallowing.
			N 64 34 W	S 64 34 E	820	Indian.
2	38 30 29.62	76 40 20.02	N 81 39 E	S 81 40 W	641	Hallowing.
			N 11 47 W	S 11 48 E	736	City.
			S 69 19 W	N 69 19 E	667	Indian.
3	38 30 45.02	76 40 05.13	N 69 42 W	S 69 42 E	581	City.
			S 53 28 W	N 53 28 E	1269	Indian.
			S 29 23 E	N 29 23 W	489	Hallowing.
4	38 30 15.20	76 39 56.94	N 2 17 E	S 2 17 W	580	Hallowing.
			N 78 33 W	S 78 33 E	1262	Indian.
			S 20 46 E	N 20 46 W	720	Dwarf.

Survey of Oyster Bars, Calvert County, Md

BUZZARD ISLAND.

(Upper Patuxent River—Chart No. 19.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 28 55.15	76 39 26.67	N 18 46 E S 81 44 W S 39 30 W	S 18 46 W N 81 44 E N 39 30 E	1135 933 888	Buzz. Billiard. Trent.
Thence along county boundary as delineated on Chart No. 19 to corner No. 2.						
2	38 29 34.74	76 39 54.78	N 15 53 E S 76 27 W S 6 50 W	S 15 53 W N 76 27 E N 6 50 E	720 561 1479	Dwarf. Sothoron. Billiard.
3	38 29 43.62	76 39 49.40	N 7 58 E S 57 50 W S 10 13 W	S 7 58 W N 57 50 E N 10 13 E	396 809 1792	Dwarf. Sothoron. Billiard.
4	38 29 02.08	76 39 12.63	S 45 34 W S 58 59 E N 0 27 W	N 45 33 E N 58 58 W S 0 27 E	1312 643 844	Trent. Morsel. Buzz.

MACKS HOLLOW.

(Upper Patuxent River—Chart No. 19.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 28 36.57	76 39 11.00	N 43 51 E S 86 34 W S 33 48 W	S 43 51 W N 86 34 E N 33 47 E	733 982 1088	Morsel. Trent. Collins.
2	38 28 47.06	76 39 18.24	S 62 23 W S 18 11 W N 75 58 E	N 62 23 E N 18 11 E S 75 58 W	890 1324 722	Trent. Collins. Morsel.
3	38 28 49.60	76 39 12.42	S 62 09 W S 22 54 W N 80 42 E	N 62 09 E N 22 54 E S 80 42 W	1066 1459 553	Trent. Collins. Morsel.
4	38 28 39.34	76 39 05.24	N 39 13 E S 82 21 W S 37 08 W	S 39 13 W N 82 21 E N 37 07 E	562 1143 1255	Morsel. Trent. Collins.

Survey of Oyster Bars, Calvert County, Md.

71

BROAD NECK (CALVERT COUNTY).

(Upper Patuxent River—Chart No. 19.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 27 41.18	76 39 00.00	N 26 03 E N 42 57 W S 54 49 W	S 26 03 W S 42 57 E N 54 49 E	848 1317 952	Sheridan. Collins. Cremona.
Thence along county boundary as delineated on Chart No. 19 to corner No. 2.						
2	38 28 00.34	76 39 09.64	N 63 40 W S 23 40 W N 79 34 E	S 63 41 E N 23 40 E S 79 34 W	715 1304 639	Collins. Cremona. Sheridan.
3	38 28 03.12	76 38 52.86	N 78 22 W S 36 56 W N 83 10 E	S 78 23 E N 36 56 E S 83 10 W	1109 1611 184	Collins. Cremona. Sheridan.
4	38 27 45.22	76 38 51.22	N 12 36 E N 53 47 W S 55 56 W	S 12 36 W S 53 48 E N 55 56 E	640 1400 1222	Sheridan. Collins. Cremona.

THOMAS (CALVERT COUNTY).

(Upper Patuxent River—Chart No. 19.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 27 12.58	76 38 14.84	N 61 07 E N 25 33 W S 49 29 W	S 61 07 W S 25 33 E N 49 29 E	1561 1914 1018	Kitt. Sheridan. Oppkit.
Thence along county boundary as delineated on Chart No. 19 to corner No. 2.						
2	38 27 41.18	76 39 00.00	N 26 03 E N 42 57 W S 54 49 W	S 26 03 W S 42 57 E N 54 49 E	848 1317 952	Sheridan. Collins. Cremona.
3	38 27 45.22	76 38 51.22	N 12 36 E N 53 47 W S 55 56 W	S 12 36 W S 53 48 E N 55 56 E	640 1400 1222	Sheridan. Collins. Cremona.

KITTS MARSH.

(Upper Patuxent River—Chart No. 19.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 26 48.30	76 37 38.66	N 88 44 E N 14 31 E N 84 48 W	S 88 44 W S 14 31 W S 84 49 E	1652 1625 1740	Battle. Kitt. Oppkit.
2	38 27 33.80	76 37 50.40	N 55 33 W S 45 55 W N 86 56 E	S 55 33 E N 45 55 E S 86 57 W	1786 1979 720	Sheridan. Oppkit. Kitt.
3	38 27 28.23	76 37 03.40	N 66 47 W S 65 59 W S 28 42 E	S 66 48 E N 65 58 E N 28 42 W	574 2921 1493	Kitt. Oppkit. Battle.
4	38 27 06.60	76 37 07.58	N 23 34 W S 79 49 W S 54 58 E	S 23 34 E N 79 48 E N 54 58 W	1042 2598 1010	Kitt. Oppkit. Battle.

Survey of Oyster Bars, Calvert County, Md.

PRISON POINT.

(Upper Patuxent River—Chart No. 19.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 26 06.26	76 36 55.93	S 89 58 E	N 89 57 W	2229	Photo.
			N 19 38 E	S 19 39 W	1544	Battle.
			S 77 55 W	N 77 55 E	1749	Fight.
2	38 26 48.30	76 37 38.66	N 88 44 E	S 88 44 W	1652	Battle.
			N 14 31 E	S 14 31 W	1625	Kitt.
			N 84 48 W	S 84 49 E	1740	Oppkit.
3	38 27 06.60	76 37 07.58	N 23 34 W	S 23 34 E	1042	Kitt.
			S 79 49 W	N 79 48 E	2598	Oppkit.
			S 54 58 E	N 54 58 W	1010	Battle.
4	38 26 25.18	76 36 32.36	S 68 15 E	N 68 15 W	1727	Photo.
			N 7 24 W	S 7 24 E	823	Battle.
			S 66 44 W	N 66 43 E	2542	Fight.

JACKS MARSH.

(Middle Patuxent River—Chart No. 19.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 25 46.60	76 36 35.83	N 68 42 E	S 68 43 W	1820	Photo.
			N 0 23 W	S 0 23 E	2116	Battle.
			N 82 27 W	S 82 26 E	2263	Fight.
2	38 26 06.26	76 36 55.93	S 89 58 E	N 89 57 W	2229	Photo.
			N 19 38 E	S 19 39 W	1544	Battle.
			S 77 55 W	N 77 55 E	1749	Fight.
3	38 26 25.18	76 36 32.36	S 68 15 E	N 68 15 W	1727	Photo.
			N 7 24 W	S 7 24 E	823	Battle.
			S 66 44 W	N 66 43 E	2542	Fight.
4	38 26 11.08	76 36 20.38	S 82 43 E	N 82 43 W	1297	Photo.
			N 18 10 W	S 18 10 E	1350	Battle.
			S 78 44 W	N 78 43 E	2704	Fight.

JACKS BAY.

(Middle Patuxent River—Chart No. 19.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 24 44.96	76 34 54.62	N 23 28 E	S 23 28 W	1603	Slim.
			N 19 50 W	S 19 51 E	2912	Photo.
			N 87 57 W	S 87 58 E	2465	Forr.
2	38 25 33.46	76 36 05.82	S 20 22 W	N 20 22 E	1650	Forr.
			S 86 17 E	N 86 16 W	2533	Slim.
			N 39 11 E	S 39 11 W	1425	Photo.
3	38 25 46.40	76 35 49.42	S 26 59 W	N 26 58 E	2225	Forr.
			S 73 59 E	N 73 58 W	2177	Slim.
			N 34 50 E	S 34 51 W	814	Photo.
4	38 25 04.79	76 34 41.18	N 19 22 E	S 19 22 W	851	Slim.
			N 33 00 W	S 33 01 E	2469	Photo.
			S 78 23 W	N 78 22 E	2879	Forr.

PARKERS WHARF.

(Middle Patuxent River—Chart No. 19.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 24 21.25	76 34 00.40	N 19 24 W	S 19 25 E	2407	Slim.
			S 70 07 W	N 70 06 E	2108	Cole.
			S 33 17 E	N 33 17 W	2561	Hutchins.
2	38 24 44.96	76 34 54.62	N 23 28 E	S 23 28 W	1603	Slim.
			N 19 50 W	S 19 51 E	2912	Photo.
			N 87 57 W	S 87 58 E	2465	Forr.
3	38 25 04.79	76 34 41.18	N 19 22 E	S 19 22 W	851	Slim.
			N 33 00 W	S 33 01 E	2469	Photo.
			S 78 23 W	N 78 22 E	2879	Forr.
4	38 24 31.32	76 33 54.75	N 26 11 W	S 26 12 E	2152	Slim.
			S 63 35 W	N 63 35 E	2381	Cole.
			S 26 51 E	N 26 51 W	2781	Hutchins.

Survey of Oyster Bars, Calvert County, Md.

BROOME ISLAND.

(Middle Patuxent River—Chart No. 19.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 24 06.73	76 33 44.00	N 24 06 W S 84 38 W S 30 26 E	S 24 07 E N 84 37 E N 30 26 W	3024 2428 1916	Slim. Cole. Hutchins.
2	38 24 21.25	76 34 00.40	N 19 24 W S 70 07 W S 33 17 E	S 19 25 E N 70 06 E N 33 17 W	2407 2108 2561	Slim. Cole. Hutchins.
3	38 24 31.32	76 33 54.75	N 26 11 W S 63 35 W S 26 51 E	S 26 12 E N 63 35 E N 26 51 W	2152 2381 2781	Slim. Cole. Hutchins.
4	38 24 43.90	76 33 17.78	N 52 01 W S 64 34 W S 5 24 E	S 52 02 E N 64 33 E N 5 24 W	2449 3447 2918	Slim. Cole. Hutchins.
5	38 24 15.43	76 33 22.44	N 36 13 W S 80 06 W S 11 35 E	S 36 14 E N 80 05 E N 11 34 W	3058 3035 1985	Slim. Cole. Hutchins.

ISLAND CREEK.

(Middle Patuxent River—Chart No. 19.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 24 00.18	76 32 37.18	N 36 43 E N 11 45 W S 29 18 W	S 36 43 W N 11 46 E N 29 18 E	1048 1407 1640	Island. Sweep. Hutchins.
2	38 24 21.82	76 32 54.59	S 8 58 W N 84 13 E N 15 07 E	N 8 58 E S 84 13 W S 15 07 W	2192 1089 671	Hutchins. Island. Sweep.
3	38 24 24.58	76 32 49.20	S 12 07 W N 88 57 E N 3 14 E	N 12 07 E S 88 58 W S 3 14 W	2305 946 557	Hutchins. Island. Sweep.
4	38 24 03.25	76 32 31.28	N 32 32 E N 19 12 W S 32 01 W	S 32 32 W S 19 12 E N 32 01 E	874 1349 1810	Island. Sweep. Hutchins.

PETERSON (CALVERT COUNTY).

(Middle Patuxent River—Chart No. 19.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 22 56.90	76 30 33.78	N 88 53 E	S 88 54 W	1920	Lend.
			N 55 05 E	S 55 05 W	1587	Sollers.
			N 13 16 E	S 13 16 W	1313.	Wheat.
2	38 23 12.22	76 31 11.86	S 76 36 W	N 76 35 E	1669	Bars.
			S 0 30 W	N 0 30 E	1989	Stock.
			N 65 25 E	S 65 24 W	1126	Wheat.
Thence along county boundary as delineated on Chart No. 19 to corner No. 3.						
3	38 23 44.44	76 31 50.08	N 30 01 E	S 30 01 W	1818	Peak.
			N 24 27 W	S 24 27 E	1506	Island.
			S 22 47 W	N 22 47 E	1601	Bars.
4	38 24 08.86	76 31 20.50	S 41 01 E	N 41 01 W	1909	Wheat.
			N 9 26 E	S 9 26 W	759	Peak.
			N 68 46 W	S 68 46 E	1511	Island.
5	38 24 00.00	76 31 04.40	N 16 06 W	S 16 06 E	1093	Peak.
			S 42 29 W	N 42 29 E	2713	Bars.
			S 35 52 E	N 35 52 W	1410	Wheat.

MEARS (CALVERT COUNTY).

(Lower Patuxent River—Chart No. 20.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 22 10.64	76 29 40.84	S 43 10 W S 58 24 E N 10 28 E	N 43 10 E N 58 24 W S 10 28 W	1491 1042 1251	Briscoe. Stump. Lend.
2	38 22 13.42	76 30 03.46	N 36 08 E S 89 59 W S 19 34 W	S 36 09 W N 89 59 E N 19 34 E	1403 1833 1251	Lend. Stock. Briscoe.
Thence along county boundary as delineated on Chart No. 20 to corner No. 3.						
3	38 22 48.14	76 30 44.62	N 88 53 E N 55 05 E N 13 16 E	S 88 54 W S 55 05 W S 13 16 W	1920 1587 1313	Lend. Sollers. Wheat.
4	38 22 56.90	76 30 33.78	S 78 29 E N 58 50 E N 0 47 E	N 78 29 W S 58 50 W S 0 47 W	1666 1184 985	Lend. Sollers. Wheat.
5	38 22 24.02	76 29 34.47	N 4 17 E S 37 42 W S 35 47 E	S 4 17 W N 37 42 E N 35 47 W	779 1943 1229	Lend. Briscoe. Stump.
6	38 22 11.06	76 29 32.03	N 0 19 W S 48 42 W S 49 25 E	S 0 19 E N 48 42 E N 49 25 W	1213 1668 862	Lend. Briscoe. Stump.

Survey of Oyster Bars, Calvert County, Md.

HELLEN.

(Lower Patuxent River—Chart No. 20.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 21 13.82	76 29 19.73	S 88 22 E N 13 27 E S 50 43 W	N 88 21 W S 13 27 W N 50 43 E	1001 1409 1172	Hellen. Stump. Nat.
Thence along county boundary as delineated on Chart No. 20 to corner No. 2.						
2	38 21 28.78	76 29 27.51	S 29 21 W S 66 10 E N 31 41 E	N 29 20 E N 66 10 W S 31 42 W	1430 1320 1017	Nat. Hellen. Stump.
3	38 21 43.02	76 29 17.82	S 29 02 W S 43 09 E N 35 43 E	N 29 01 E N 43 09 W S 35 43 W	1975 1389 475	Nat. Hellen. Stump.
4	38 22 10.64	76 29 40.84	S 43 10 W S 58 24 E N 10 28 E	N 43 10 E N 58 24 W S 10 28 W	1491 1042 1251	Briscoe. Stump. Lend.
5	38 22 11.06	76 29 32.03	N 0 19 W S 48 42 W S 49 25 E	S 0 19 E N 48 42 E N 49 25 W	1213 1668 862	Lend. Briscoe. Stump.
6	38 22 12.02	76 29 22.46	N 12 27 W S 53 04 W S 34 01 E	S 12 27 E N 53 03 E N 34 01 W	1208 1886 715	Lend. Briscoe. Stump.
7	38 21 35.98	76 28 55.14	N 27 35 W S 46 20 W S 24 08 E	S 27 35 E N 46 19 E N 24 08 W	702 2158 850	Stump. Nat. Hellen.
8	38 21 33.41	76 29 04.07	N 7 05 W S 43 19 W S 40 19 E	S 7 05 E N 43 10 E N 40 18 W	714 1029 903	Stump. Nat. Hellen.
9	38 21 16.78	76 28 52.37	N 17 26 W S 62 44 W S 64 53 E	S 17 26 E N 62 43 E N 64 53 W	1331 1838 303	Stump. Nat. Hellen.

HUNGERFORD HOLLOW.

(Lower Patuxent River—Chart No. 20.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 20 03.38	76 28 46.62	N 38 28 E N 87 57 W S 36 39 W	S 38 29 W S 87 57 E N 36 39 E	1247 1223 514	Ton. Mill. Bur.
2	38 20 05.82	76 28 58.74	N 50 51 E S 87 33 W S 1 47 E	S 50 51 W N 87 33 E N 1 47 W	1415 901 494	Ton. Mill. Bur.
3	38 20 33.14	76 28 48.62	S 50 37 W S 10 09 W S 88 05 E	N 50 37 E N 10 09 E N 88 06 W	1512 1438 829	Mill. Bur. Ton.
4	38 20 30.18	76 28 36.35	S 60 06 W S 23 46 W N 81 50 E	N 60 05 E N 23 46 E S 81 50 W	1725 1437 507	Mill. Bur. Ton.

BARN GATES.

(Lower Patuxent River—Chart No. 20.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 19 31.80	76 28 19.14	N 21 38 E N 57 48 W S 37 50 W	S 21 38 W S 57 48 E N 37 50 E	775 1225 547	New. Bur. Town.
Thence along county boundary as delineated on Chart No. 20 to corner No. 2.						
2	38 19 32.82	76 29 15.02	S 34 21 W S 67 53 E N 35 55 E	N 34 21 E N 67 53 W S 35 55 W	518 1240 763	Cable. Town. Bur.
Thence along county boundary as delineated on Chart No. 20 to corner No. 3.						
3	38 19 52.74	76 29 15.14	N 49 06 W S 14 48 W S 83 16 E	S 49 06 E N 14 48 E N 83 16 W	614 1137 454	Mill. Cable. Bur.
4	38 19 49.38	76 29 08.36	N 51 20 W S 25 27 W N 78 19 E	S 51 21 E N 25 27 E S 78 19 W	826 1093 277	Mill. Cable. Bur.
5	38 19 38.36	76 29 05.73	N 24 59 E N 38 51 W S 41 16 W	S 24 59 W S 38 51 E N 41 15 E	476 1140 818	Bur. Mill. Cable.
6	38 19 50.62	76 28 52.41	N 83 12 W S 27 12 E N 85 48 E	S 83 12 E N 27 12 W S 85 48 W	154 1198 1173	Bur. Town. New.
7	38 19 49.33	76 28 27.26	N 85 42 W S 6 42 W N 75 31 E	S 85 42 E N 6 41 E S 75 32 W	823 1030 516	Bur. Town. New.
8	38 19 44.56	76 28 13.36	N 24 30 E N 79 24 W S 29 34 W	S 24 30 W S 79 25 E N 29 34 E	319 1211 992	New. Bur. Town.
9	38 19 36.50	76 28 08.41	S 62 03 W S 88 20 E N 0 05 E	N 62 02 E N 88 20 W S 0 05 W	938 743 562	M. E. Church. Catholic Church Cross. New.

Survey of Oyster Bars, Calvert County, Md.

BACK OF ISLAND.

(Lower Patuxent River—Chart No. 20.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 37.46	76 27 22.28	N 2 47 E N 14 20 W S 57 21 W	S 2 47 W S 14 20 E N 57 21 E	733 1601 1309	Sand. M. E. Church. Ben.
2	38 19 14.98	76 27 45.78	S 51 03 E N 38 36 E N 11 22 E	N 51 03 W S 38 36 W S 11 22 W	849 365 718	Sand. M. E. Church. Catholic Church Cross,
3	38 19 31.80	76 28 19.14	N 21 38 E N 57 48 W S 37 50 W	S 21 38 W S 57 48 E N 37 50 E	775 1225 547	New. Bur. Town.
4	38 19 36.50	76 28 08.41	S 62 03 W S 88 20 E N 0 05 E	N 62 02 E N 88 20 W S 0 05 W	938 743 562	M. E. Church. Catholic Church Cross. New.
5	38 19 17.36	76 27 40.64	S 40 27 E N 23 59 E N 87 42 W	N 40 27 W S 23 59 W S 87 42 E	807 224 1359	Sand. M. E. Church. Town.
6	38 18 43.78	76 27 17.52	N 9 56 W N 58 57 W S 53 12 W	S 9 56 E S 58 58 E N 53 11 E	526 2302 1534	Sand. Town. Ben.

SHELL PILE.

(Lower Patuxent River—Chart No. 20.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 19 14.10	76 27 16.86	N 44 23 E N 59 44 W S 3 19 W	S 44 24 W S 59 44 E N 3 19 E	479 626 156	Fishstack. M. E. Church. K. of P. Flagstaff.
2	38 19 15.60	76 27 18.42	N 52 15 E N 62 03 W S 8 56 E	S 52 15 W S 62 03 E N 8 56 W	475 564 209	Fishstack. M. E. Church. K. of P. Flagstaff.
3	38 19 21.22	76 27 09.38	N 53 11 E N 84 11 W S 27 40 W	S 53 11 W S 84 12 E N 27 40 E	169 743 447	Fishstack. M. E. Church. K. of P. Flagstaff.
4	38 19 19.90	76 27 07.84	N 33 01 E N 81 16 W S 35 12 W	S 33 01 W S 81 16 E N 35 12 E	175 789 431	Fishstack. M. E. Church. K. of P. Flagstaff.

Survey of Oyster Bars, Calvert County, Md.

79

CHERRY TREE.

(Lower Patuxent River—Chart No. 20.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 19 01.06	76 27 05.07	N 1 34 E	S 1 34 W	782	Fishstack.
			N 48 40 W	S 48 40 E	430	K. of P. Flagstaff.
			S 81 22 W	N 81 21 E	426	Sand.
2	38 19 09.49	76 27 01.33	N 8 54 W	S 8 54 E	503	Fishstack.
			N 89 55 W	S 89 55 E	422	K. of P. Flagstaff.
			S 56 14 W	N 56 13 E	627	Sand.
3	38 19 16.62	76 27 07.84	N 20 18 E	S 20 18 W	273	Fishstack.
			N 73 33 W	S 73 34 E	814	M. E. Church.
			S 45 53 W	N 45 53 E	347	K. of P. Flagstaff.
4	38 19 19.66	76 27 06.41	N 20 17 E	S 20 17 W	165	Fishstack.
			N 81 08 W	S 81 08 E	828	M. E. Church.
			S 39 50 W	N 39 50 E	447	K. of P. Flagstaff.
5	38 19 07.48	76 26 50.48	N 32 56 W	S 32 56 E	674	Fishstack.
			N 84 36 W	S 84 36 E	713	K. of P. Flagstaff.
			S 70 53 W	N 70 52 E	856	Sand.
6	38 19 03.43	76 26 59.69	N 9 49 W	S 9 49 E	712	Fishstack.
			N 66 21 W	S 66 21 E	507	K. of P. Flagstaff.
			S 75 42 W	N 75 41 E	583	Sand.

Survey of Oyster Bars, Calvert County, Md.

SWASH.

(Lower Patuxent River—Chart No. 20.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 19 14.46	76 26 42.80	N 22 31 E	S 22 31 W	492	Bon.
			N 59 57 W	S 59 57 E	658	Fishstack.
			S 63 01 W	N 63 01 E	1134	Sand.
2	38 19 18.38	76 26 46.80	N 42 30 E	S 42 30 W	435	Bon.
			N 66 34 W	S 66 35 E	505	Fishstack.
			S 54 27 W	N 54 27 E	1114	Sand.
3	38 19 16.23	76 26 50.63	N 45 14 E	S 45 14 W	558	Bon.
			N 53 55 W	S 53 55 E	458	Fishstack.
			S 54 27 W	N 54 26 E	990	Sand.
4	38 19 19.66	76 26 53.64	N 59 43 E	S 59 43 W	551	Bon.
			N 61 18 W	S 61 18 E	322	Fishstack.
			S 61 14 W	N 61 14 E	714	K. of P. Flagstaff.
5	38 19 20.62	76 26 46.83	N 50 13 E	S 50 13 W	383	Bon.
			N 75 14 W	S 75 14 E	479	Fishstack.
			S 65 01 W	N 65 01 E	890	K. of P. Flagstaff.
6	38 19 24.62	76 26 40.42	N 48 24 E	S 48 24 W	166	Bon.
			N 88 50 W	S 88 50 E	633	Fishstack.
			S 62 24 W	N 62 24 E	1102	K. of P. Flagstaff.
7	38 19 15.46	76 26 35.24	N 77 13 E	S 77 13 W	1500	Bareda House Cupola.
			N 1 47 W	S 1 47 E	420	Bon.
			N 69 00 W	S 69 00 E	826	Fishstack.

SANDY POINT LUMPS.

(Lower Patuxent River—Chart No. 20.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 32.95	76 26 56.30	N 65 07 E	S 65 08 W	2935	Drum Point Light.
			N 6 58 W	S 6 58 E	1742	Fishstack.
			N 36 32 W	S 36 32 E	1100	Sand.
2	38 19 01.06	76 27 05.07	N 1 34 E	S 1 34 W	782	Fishstack.
			N 48 40 W	S 48 40 E	430	K. of P. Flagstaff.
			S 81 22 W	N 81 21 E	426	Sand.
3	38 19 03.43	76 26 59.69	N 9 49 W	S 9 49 E	712	Fishstack.
			N 66 21 W	S 66 21 E	507	K. of P. Flagstaff.
			S 75 42 W	N 75 41 E	583	Sand.
4	38 18 38.82	76 26 36.60	N 64 08 E	S 64 09 W	2377	Drum Point Light.
			N 25 38 W	S 25 38 E	1698	Fishstack.
			N 59 48 W	S 59 48 E	1363	Sand.

SOUTHEAST MIDDLE-GROUND.

(Lower Patuxent River—Chart No. 20.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 36.88	76 26 17.61	N 56 01 E	S 56 01 W	1972	Drum Point Light.
			N 15 38 W	S 15 38 E	1787	Bon.
			N 65 56 W	S 65 57 E	1843	Sand.
2	38 18 54.83	76 26 44.86	N 78 06 E	S 78 07 W	2410	Drum Point Light.
			N 12 16 E	S 12 16 W	1141	Bon.
			N 81 20 W	S 81 21 E	970	Sand.
3	38 19 03.18	76 26 40.68	N 84 31 E	S 84 32 W	2258	Drum Point Light.
			N 8 58 E	S 8 58 W	845	Bon.
			S 83 53 W	N 83 53 E	1076	Sand.
4	38 18 59.63	76 26 25.20	N 79 39 E	S 79 39 W	1867	Drum Point Light.
			N 16 21 W	S 16 21 E	993	Bon.
			S 89 23 W	N 89 23 E	1481	Sand.
5	38 19 07.06	76 26 07.32	N 86 27 E	S 86 27 W	1365	Drum Point Light.
			N 49 33 E	S 49 33 W	948	Bareda House Cupola.
			N 47 03 W	S 47 03 E	1031	Bon.
6	38 19 15.48	76 26 06.76	S 81 35 E	N 81 34 W	1362	Drum Point Light.
			N 64 53 E	S 64 53 W	781	Bareda House Cupola.
			N 61 27 W	S 61 27 E	876	Bon.
7	38 19 14.40	76 26 14.82	S 84 03 E	N 84 02 W	1569	Drum Point Light.
			N 67 52 E	S 67 52 W	994	Bareda House Cupola.
			N 50 40 W	S 50 40 E	718	Bon.
8	38 19 14.76	76 26 22.18	S 84 19 E	N 84 20 W	1765	Drum Point Light.
			N 71 57 E	S 71 57 W	1175	Bareda House Cupola.
			N 39 05 W	S 39 06 E	571	Bon.
9	38 19 23.38	76 26 16.02	S 73 42 E	N 73 42 W	1659	Drum Point Light.
			N 86 06 E	S 86 06 W	954	Bareda House Cupola.
			N 73 46 W	S 73 46 E	546	Bon.
10	38 19 23.77	76 25 52.60	S 63 44 E	N 63 44 W	1083	Drum Point Light.
			N 81 05 E	S 81 05 W	335	Bareda House Cupola.
			N 83 05 W	S 83 06 E	1154	Bon.
11	38 18 40.96	76 25 49.21	S 57 34 E	N 57 33 W	1547	Carroll 2.
			N 42 23 E	S 42 23 W	1306	Drum Point Light.
			N 9 08 E	S 9 08 W	1516	Bareda House Cupola.

Survey of Oyster Bars, Calvert County, Md.

LIGHT HOUSE LUMP.

(Lower Patuxent River—Chart No. 20.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 50.42	76 25 42.82	S 44 41 E N 47 44 E N 3 27 E	N 44 40 W S 47 45 W S 3 27 W	1616 960 1179	Carroll 2. Drum Point Light. Bareda House Cupola
2	38 19 00.00	76 25 36.78	S 33 32 E N 59 36 E N 5 59 W	N 33 32 W S 59 36 W S 5 59 E	1766 638 858	Carroll 2. Drum Point Light. Bareda House Cupola.
3	38 19 00.00	76 25 21.67	S 21 19 E N 24 45 E N 29 54 W	N 21 19 W S 24 45 W S 29 55 E	1580 355 984	Carroll 2. Drum Point Light. Bareda House Cupola.
4	38 18 50.60	76 25 15.98	S 20 07 E N 0 13 W N 28 45 W	N 20 07 W S 0 13 E S 28 45 E	1230 640 1335	Carroll 2. Drum Point Light. Bareda House Cupola.

OLD LUMP.

(Entrance Patuxent River—Chart No. 20.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 58.36	76 25 10.00	S 10 34 E S 67 54 E N 23 46 W	N 10 34 W N 67 53 W S 23 46 E	1441 2014 411	Carroll 2. Hog 2. Drum Point Light.
2	38 19 09.57	76 25 16.07	S 60 45 E S 13 21 E S 83 58 W	N 60 44 W N 13 20 W N 83 57 E	2324 1844 3335	Hog 2. Carroll 2. Sand.
3	38 19 10.57	76 25 02.48	S 84 40 W S 2 01 E S 54 56 E	N 84 39 E N 2 01 W N 54 56 W	363 1830 2036	Drum Point Light. Carroll 2. Hog 2.

CARROLL MUDS (CALVERT COUNTY).

(Entrance Patuxent River—Chart No. 20.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 45.42	76 25 04.36	S 6 40 E S 79 23 E N 20 54 W	N 6 40 W N 79 23 W S 20 55 E	988 1746 874	Carroll 2. Hog 2. Drum Point Light.
2	38 18 52.28	76 25 04.30	S 5 19 E S 72 08 E N 27 23 W	N 5 19 W N 72 08 W S 27 23 E	1220 1802 656	Carroll 2. Hog 2. Drum Point Light.
3	38 19 07.56	76 24 21.07	N 87 21 W S 30 57 W S 27 56 E	S 87 21 E N 30 57 E N 27 56 W	1462 2013 1210	Drum Point Light. Carroll 2. Hog 2.
4	38 19 03.80	76 24 17.62	N 82 51 W S 35 10 W S 26 46 E	S 82 52 E N 35 09 E N 26 46 W	1565 1958 1054	Drum Point Light. Carroll 2. Hog 2.
Thence along county boundary as delineated on Chart No. 20 to corner No. 1.						

SIMMONS.

(Entrance Patuxent River—Chart No. 20.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 19 29.40	76 24 22.40	S 64 52 W S 22 06 W S 18 27 E	N 64 52 E N 22 06 E N 18 26 W	1575 2659 1903	Drum Point Light. Carroll 2. Hog 2.
2	38 19 36.67	76 24 29.70	S 53 26 W S 16 35 W S 21 13 E	N 53 25 E N 16 34 E N 21 13 W	1534 2826 2199	Drum Point Light. Carroll 2. Hog 2.
3	38 19 43.80	76 24 15.42	S 54 19 W S 21 54 W S 10 18 E	N 54 19 E N 21 54 E N 10 18 W	1984 3179 2327	Drum Point Light. Carroll 2. Hog 2.
4	38 19 36.56	76 24 08.78	S 63 01 W S 26 44 W S 6 41 E	N 63 00 E N 26 43 E N 6 40 W	2006 3036 2060	Drum Point Light. Carroll 2. Hog 2.

CHINESE MUDS (CALVERT COUNTY).

(Entrance Patuxent River—Chart No. 20.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 19 17.14	76 23 47.02	S 83 51 W S 13 40 W S 45 24 E	N 83 50 E N 13 40 E N 45 23 W	2380 1432 3820	Drum Point Light. Hog 2. Cedar Point Light.
2	38 19 47.84	76 23 39.57	S 63 17 W S 12 28 W S 34 15 E	N 63 16 E N 12 27 E N 34 14 W	2863 2485 4479	Drum Point Light. Hog 2. Cedar Point Light.
3	38 20 39.76	76 23 17.16	N 1 58 E S 46 06 W S 19 25 E	S 1 58 W N 46 04 E N 19 25 W	2035 4384 5792	Pat. Drum Point Light. Cedar Point Light.
4	38 21 01.14	76 22 41.20	N 33 59 W S 47 34 W S 8 55 E	S 34 00 E N 47 32 E N 8 55 W	1584 5574 6259	Pat. Drum Point Light. Cedar Point Light.
5	38 20 46.06	76 22 13.08	N 41 55 W S 56 13 W S 2 15 E	S 41 56 E N 56 11 E N 2 15 W	2449 5849 5679	Pat. Drum Point Light. Cedar Point Light.
6	38 19 37.58	76 21 34.27	N 32 48 W S 80 55 W S 13 30 W	S 32 49 E N 80 52 E N 13 30 E	4915 5968 3461	Pat. Drum Point Light. Cedar Point Light.

Thence along county boundary as delineated on Chart No. 20 to corner No. 1.

Survey of Oyster Bars, Calvert County, Md.

PARKER MOORE.

(Entrance Patuxent River—Chart No. 20.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 19 47.84	76 23 39.57	S 63 17 W	N 63 16 E	2863	Drum Point Light.
			S 12 28 W	N 12 27 E	2485	Hog 2.
			S 34 15 E	N 34 14 W	4479	Cedar Point Light.
2	38 20 51.48	76 23 50.23	S 33 34 W	N 33 33 E	4124	Drum Point Light.
			S 3 10 W	N 3 10 E	4579	Hog 2.
			S 25 35 E	N 25 34 W	6494	Cedar Point Light.
3	38 20 59.42	76 23 38.88	N 25 14 E	S 25 14 W	1516	Pat.
			S 34 53 W	N 34 53 E	4815	Drum Point Light.
			S 6 32 W	N 6 32 E	4872	Hog 2.
4	38 20 39.76	76 23 17.16	N 1 58 E	S 1 58 W	2035	Pat.
			S 46 06 W	N 46 04 E	4384	Drum Point Light.
			S 19 25 E	N 19 25 W	5792	Cedar Point Light.

UNDER THE CLIFFS.

(Entrance Patuxent River—Chart No. 20.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 20 11.66	76 24 25.40	S 32 44 W	N 32 44 E	2489	Drum Point Light.
			S 13 19 W	N 13 19 E	3996	Carroll 2.
			S 11 55 E	N 11 55 W	3300	Hog 2.
2	38 20 13.98	76 24 29.06	S 29 54 W	N 29 54 E	2505	Drum Point Light.
			S 11 44 W	N 11 44 E	4061	Carroll 2.
			S 13 15 E	N 13 15 W	3399	Hog 2.
3	38 20 53.46	76 23 53.58	N 32 02 W	S 32 02 E	4133	Drum Point Light.
			S 2 01 W	N 2 01 E	4642	Hog 2.
			S 26 02 E	N 26 01 W	6593	Cedar Point Light.
4	38 20 51.48	76 23 50.23	S 33 34 W	N 33 33 E	4124	Drum Point Light.
			S 3 10 W	N 3 10 E	4579	Hog 2.
			S 25 35 E	N 25 34 W	6494	Cedar Point Light.

LITTLE COVE POINT.

(Entrance Patuxent River—Chart No. 20.)

Cor ner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangula- tion station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 20 39.76	76 23 17.16	N 1 58 E	S 1 58 W	2035	Pat.
			S 46 06 W	N 46 04 E	4384	Drum Point Light.
			S 19 25 E	N 19 25 W	5792	Cedar Point Light.
2	38 20 59.42	76 23 38.88	N 25 14 E	S 25 14 W	1516	Pat.
			S 34 53 W	N 34 53 E	4515	Drum Point Light.
			S 6 32 W	N 6 32 E	4872	Hog 2.
3	38 21 20.38	76 23 16.98	N 5 34 E	S 5 34 W	667	Pat.
			S 35 39 W	N 35 38 E	5428	Drum Point Light.
			S 11 35 W	N 11 34 E	5663	Hog 2.
4	38 21 01.14	76 22 41.20	N 33 59 W	S 34 00 E	1584	Pat.
			S 47 34 W	N 47 32 E	5574	Drum Point Light.
			S 8 55 E	N 8 55 W	6259	Cedar Point Light.

COVE POINT BIGHT.

(Entrance Patuxent River—Chart No. 20.)

	° ' "	° ' "			Yards.	
			° ' "	° ' "		
1	38 21 26.96	76 22 07.02	N 20 11 W	S 20 12 E	3715	Cove Point Light.
			N 76 09 W	S 76 10 E	1846	Pat.
			S 0 30 E	N 0 30 W	7055	Cedar Point Light.
2	38 22 20.98	76 23 03.09	N 7 03 E	S 7 03 W	1682	Cove Point Light.
			N 62 59 W	S 62 59 E	934	White House (N. E. chimney).
			S 12 26 W	N 12 26 E	1412	Pat.
3	38 22 30.21	76 22 47.66	N 8 32 W	S 8 32 E	1369	Cove Point Light.
			N 84 48 W	S 84 49 E	1247	White House (N. E. chimney).
			S 22 53 W	N 22 53 E	1835	Pat.
4	38 21 34.40	76 21 56.12	N 25 54 W	S 25 54 E	3598	Cove Point Light.
			N 84 44 W	S 84 45 E	2091	Pat.
			S 1 47 W	N 1 47 E	7309	Cedar Point Light.

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *
SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved March 4, 1909.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and ten, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and ten, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of the legislature of Maryland approved April 2, 1906.]

AN ACT To establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That the following sections be, and they are hereby, added to Article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and

charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis; and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie. * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section.

* * * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey, and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable, the limits and boundaries of the natural beds, bars and rocks, as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the same to the clerks of the Circuit Court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks shall be construed in all the courts of the State to be barren bottoms, and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act; provided, that the said survey and report shall not be construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the Survey, is as follows:

AN ACT Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or levelling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.^a *And be it enacted,* That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the

^a Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses, (to be by them sworn or affirmed and examined) shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid; ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from Second Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland had a twofold object in view:

1. To encourage an industry in oyster culture upon the *barren bottoms* beneath the tidewaters of the State.

2. To prevent the leasing of *natural oyster bars* for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

DEFINITION OF A NATURAL OYSTER BAR.

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoying them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the Commission."

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturists, may be made to yield a greater number of oysters than they now produce."

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

The definition of a natural oyster bar which very nearly approaches a reasonable and satisfactory compromise between the views of the subject held by *oystermen* on one hand and by *oyster culturists* on the other is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Todd v. Job T. Moore.

This definition has been adopted by the Shell Fish Commission as the basis for the determination of the status of the various oyster bottoms surveyed and is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them; and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the Act of Assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the Act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and can not be located or appropriated by any individual.

APPLICATION OF DEFINITION.

Before this definition may be of use in determining, accurately and scientifically, the status of an oyster ground, its central idea, "livelihood," must be expanded into accurately determinable factors, and these factors must be combined into a practical scheme of investigating the condition of the ground under consideration.

Stated briefly, a *livelihood* is represented by a *sum of money* obtained from the sale, at a fixed *price*, of a certain *quantity of oysters* gathered in a given *time* from an allotted *area* of ground.

Knowing the value of each of these factors it becomes possible to calculate the number of oysters an oyster ground must produce per square yard in order that oystermen may secure a livelihood by working upon it.

NOTE.—The factors into which the Commission resolved the livelihood problem, the value assigned to each factor, and the scheme devised for practical use in examining and applying the definition to oyster bottoms are given in outline in their Second Report under the heading of the preceding extract, and in detail in their First Report on pages 32 to 69.

APPENDIX C.—SUMMARY OF THE PARTICULAR SURVEYING OPERATIONS WHICH CONSTITUTE AN "OYSTER SURVEY" AS NOW BEING CARRIED ON IN MARYLAND.

Explanation.—A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest practical accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Triangulation survey.—Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a frame work or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

Topographic survey.—The technical records which establish the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the leasable bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

Hydrographic survey.—In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Necessary foundation for an oyster survey.—Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Special surveys and investigations pertaining to oysters.—Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations^a making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding boat party in addition to the usual hydrographic work.^b This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

^a See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

^b See pages 104 to 123 of "First Annual Report of Maryland Shell Fish Commission."

The special oyster investigations ^a consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

Preparation of results.—The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described. ^b This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for publication by the Government, the preparation of that part of the annual report of the Commission covering the special oyster surveys and investigations, the making of the leasing charts and finished projections, and finally the filing of the oyster charts and records with the courts and the Commission, thus opening a county for oyster culture.

Summary.—From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

^a See pages 30 to 67 and 129 to 199 of "First Annual Report of Maryland Shell Fish Commission."

^b No mention is made here of the large amount of administrative work of the Commission, which is greatly complicated and increased by the effect of the oyster-survey operations on many thousands of people whose interests are more or less involved; or of the large amount of survey work involved in the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

Survey of Oyster Bars, Calvert County, Md.

APPENDIX D.—STATISTICS OF RESULTS OF THE COMBINED OYSTER SURVEY OPERATIONS OF THE GOVERNMENT AND STATE.^a

Operations.	Anne Arundel County.	Somerset County.	Wicomico County.	Worcester County.	Calvert County.	Total. ^b
Beginning of field work.....	June 29, 1906	May 2, 1907	Aug. 27, 1907	Nov. 8, 1907	May 2, 1908	-----
Filing of certified charts and reports.....	June 20, 1907	July 1, 1908	Dec. 1, 1908	Apr. 12, 1909	Dec. 14, 1909	-----
Natural oyster bars surveyed and delineated.....	91	37	15	28	41	212
Acres of natural oyster bars.....	33,666	27,566	2,038	1,655	12,303	77,228
Crab bottoms surveyed and delineated.....		54				54
Acres of crab bottoms.....		32,108				32,108
Clam beds surveyed and delineated.....		3				3
Acres of clam beds.....		560				560
Boundary buoys located and planted.....	302	184	53	108	140	826
Triangulation landmarks established.....	123	86	10	48	78	334
Miles of shore line covered by triangulation.....	170	125	40	95	95	555
Square miles of water covered by triangulation.....	220	375	44	110	157	887
Miles of examination of shell bottom with chain apparatus.....	369	296	58	61	250	1,036
Oyster investigation stations occupied.....	440	679	162	147	667	2,095
Tide stations established.....	4	3	1	1	2	11
Number of soundings over shell bottoms.....	37,049	17,904	3,387	3,649	11,292	73,281
Square miles covered by soundings and chain apparatus.....	58	47	3	3	30	131
Projections prepared and plotted.....	9	13	2	5	8	36
Leasing charts prepared.....	13	12	2	3	5	35
Oyster charts published.....	4	6	2	3	5	20
Reports published.....	2	2	2	2	2	7
Progress maps published.....	2	2	2	2	2	7

^a These statistics do not include the large amount of triangulation, topography, and hydrography resulting from previous work of the Coast and Geodetic Survey, which was utilized in the preparation of the published oyster charts and records. Work in St. Marys and Charles counties has been finished, but final statistics of results will not be published until these counties are opened for oyster culture.

^b Less quantities covered by statistics of more than one county.

^c Total area of natural oyster bars of Connecticut is 5,770 acres.

COAST AND GEODETIC SURVEY
 PROGRESS MAP
 CALVERT COUNTY
 MARYLAND

To accompany report of work of United States
 Coast and Geodetic Survey in cooperation
 with the Maryland Shell Fish Commission

1908

Note: Area covered by
 Chart No. 19 is printed
 on this section of
 Chart No. 19

- Landmarks (Coast Survey Triangulation Stations)
- Waters within territorial limits of county
- Limits of projections on file at Washington
- Limits of charts published by Coast and Geodetic Survey

Scale 1:62,500

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

CHARLES COUNTY MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND
REPORT OF WORK OF UNITED STATES COAST
AND GEODETIC SURVEY IN COOPERATION
WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND
SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON

GOVERNMENT PRINTING OFFICE

1911

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, January 27, 1911.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, together with certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shell fish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, 1909, and 1910.

Respectfully,

O. H. TITTMANN, *Superintendent.*

To HON. CHARLES NAGEL,
Secretary of Commerce and Labor.

CERTIFICATION.

BALTIMORE, MD., *January 25, 1911.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in Charles County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,

Chief of Coast and Geodetic Survey Party,

Assistant, Coast and Geodetic Survey.

BALTIMORE, MD., *January 25, 1911.*

Examined and certified to be correct.

WALTER J. MITCHELL,

CASWELL GRAVE,

BENJAMIN K. GREEN,

Maryland Shell Fish Commission.

SWEPSON EARLE,

Hydrographic Engineer.

NOTE.—Certified copies of this publication and of the charts of the natural oyster bars of Charles County were filed in the office of the clerk of the circuit court of Charles County and in the office of the Board of Shell Fish Commissioners on January 27, 1911.

CONTENTS.

	Page.
PROGRESS MAP.....	follows 62
LETTER OF SUBMITTAL.....	3
CERTIFICATION.....	5
INTRODUCTION:	
Publications.....	9
Cooperation of the Coast and Geodetic Survey.....	10
Cooperation of the Bureau of Fisheries.....	10
General statement of work of Coast and Geodetic Survey.....	10
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions.....	12
Organization and equipment.....	13
Chronological statement of work.....	13
Statistics.....	14
General remarks.....	14
CHARTS AND MAPS:	
Charts of natural oyster bars.....	16
Leasing charts.....	17
Projections.....	18
Progress maps.....	18
BOUNDARIES OF THE COUNTY WATERS:	
Waters within territorial limits of county.....	19
Waters contiguous to county.....	20
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation.....	21
Method of describing triangulation stations.....	24
Descriptions of triangulation stations in county and adjacent waters—	
<i>Chart No. 26 (Wicomico River)—</i>	
Barber.....	24
Upper.....	24
Key.....	24
Stoddard.....	25
Cohouck.....	25
Hayden.....	26
Perry.....	26
Burr.....	26
Fact.....	27
Bowman.....	27
Eedling.....	28
Farr.....	28
Gust.....	28
Lyon.....	29
Sacred Heart Church Spire (Bushwood).....	29
Hedney.....	29
Charles.....	30
Weiss.....	30
Blakistone.....	30
Hard.....	31
Rock Point Catholic Church Cross.....	31
Proc.....	31

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 26 (Wicomico River)—Continued.

	Page.
Corner.....	32
St. Margaret 2.....	32
Cobb Point Bar Light.....	32
River Springs Catholic Chapel Cross.....	33
Sound.....	33
Bailey.....	33
St. Catherine.....	34
Waterloo.....	34

Subchart on Chart No. 26 (Patuxent River)^a—

Prince.....	35
Leitch.....	35
Fodder.....	35
Buena.....	36
Teague.....	36
Catholic Church Cross (Benedict).....	37
City.....	37
Hallowing.....	38
Indian.....	38
Dwarf.....	39
Sothoron.....	39
Buzz.....	40

BOUNDARIES OF OYSTER BARS:

Explanation.....	41
Method of describing boundaries.....	42
Surveying methods for relocation of boundaries.....	43
Boundaries of natural oyster bars in county ^b	46

Chart No. 26 (Wicomico River)—

Stoddard.....	46
Wicomico Lumps.....	47
Mills West.....	47
Joel Lumps.....	48
Windmill.....	48
Fenwick.....	49
Wicomico Middleground.....	49
Charleston Creek.....	50
Lancaster.....	50
Rock Point.....	51
Shipping Point.....	52
Cobb Point.....	52

Subchart on Chart No. 26 (Patuxent River)^a—

Teague.....	53
Elbow.....	53
Carpenters Yard.....	54

APPENDICES:

Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.....	55
Appendix B.—“The Haman Oyster Culture Law” (extract from Second Report of Shell Fish Commission).....	59
Appendix C.—Summary of the particular surveying operations which constitute an “oyster survey” as now being carried on in Maryland.....	60
Appendix D.—Statistics of results of the combined operations of the Government and State..	62

^a See also subchart on Chart No. 19.^b See separate publications for boundaries of natural bars in adjacent counties.

SURVEY OF OYSTER BARS, CHARLES COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws ^a authorizing the work and the natural division of the surveying operations ^b of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.^c The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey in charge of the work of that service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.^d

The publications prepared and issued by the State under the direction of the Shell Fish Commission consist of annual reports^e of all the operations of the Commission

^a See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

^b See Appendix C for a summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.

^c These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C. The publications now ready for issue are those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, and Charles counties.

^d The technical records and charts for each county are published separately on account of the requirements of the oyster-culture laws of the State and the practical considerations which make it desirable to have each county "opened up" for oyster culture as soon as practicable after the completion of its survey. For these reasons and the fact that these reports are each arranged for distribution and use in one county only without reference to other published records, much of the text of this publication is of necessity identical with similar previous publications for other counties.

^e These reports can be obtained by application to the Shell Fish Commission, Marine Bank Building, Baltimore, Md. They are issued annually in October, and the first and second reports are now available for distribution.

performed under the provisions of the laws of Maryland,^a including results of biological and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.^b

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential as a foundation for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.^c A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the Bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL STATEMENT OF WORK OF COAST AND GEODETIC SURVEY.^d

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need very

^a See Appendix B for an extract from the "Second Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman Oyster Culture Law."

^b See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

^c Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

^d For a detail statement of the very large amount of excellent oyster survey work of the Maryland Shell Fish Commission see the "Annual Reports of the Maryland Shell Fish Commission."

little other summary than is indicated by the published "Charts of Natural Oyster Bars" and the index of hydrographic projections and triangulation stations shown on the county progress maps attached to each report.

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster-survey operations.

The hydrographic projections and published charts are prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shell-fish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to and permanently fixed by published technical descriptions which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way, and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County":

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last 65 years.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY IN CHARLES COUNTY.

INSTRUCTIONS.

The following letters, together with the laws^a of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the survey at Washington, have proved very beneficial to the work and are greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His Excellency Hon. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the Commissioners, prepare a programme of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,
U. S. C. and G. S. Steamer Endeavor, Baltimore, Md.

^a For these laws see Appendix A.

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the field and the preparation for publication of oyster charts and technical records in the office at Washington.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster*, the Coast and Geodetic Survey party has had the constant use of the large steam launch *Inspector* and several other boats furnished by its own service, and the occasional use of the Bureau of Fisheries launch *Canvasback*^a and the steamer *Governor McLane*^b of the State fishery force.

The greater part of the equipment of instruments for the operations of both the Government and State has been furnished by the Coast and Geodetic Survey and consists of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CRONOLOGICAL STATEMENT OF WORK.

The field work of the Coast and Geodetic Survey in Charles County^c dates from August 18, 1908, when the house boat *Oyster* was moved from St. Leonards Creek to an anchorage in Battle Creek which is located about 5 miles to the south of that small portion of Charles County bordering on the Patuxent River. The headquarters of the surveying operations remained at this harbor until the completion of that part of the field work which naturally included all of the Patuxent River waters of Calvert and St. Marys counties as well as those of Charles County, although the results are published separately.

On September 3, 1908, the house boat finally left the Patuxent River for a new anchorage in one of the tributaries of Potomac River in St. Marys County, and the field work in Charles County was dropped from that date for a period of nearly two months.

On October 28, 1908, the house boat *Oyster* was towed by the *Governor McLane* to an anchorage in the lower part of Wicomico River off Rock Point in Charles County. From this anchorage as a headquarters the surveying operations for the Wicomico waters of both Charles and St. Marys counties were carried on until practically completed on November 25, 1909, when the house boat was towed to Bretons Bay off Leonardtown in St. Marys County.

On December 2, 1909, it was found necessary to obtain additional triangulation information for the publication of the technical report for Calvert County, which inci-

^a By courtesy of Dr. H. F. Moore, United States Bureau of Fisheries.

^b By courtesy of Capt. James A. Turner, commanding.

^c The field work of Charles, Calvert, and St. Marys counties was so intermixed in the Patuxent River that the chronological statement of work for any one of these counties necessarily includes a considerable part of the work of the other counties.

mentally involved new work required for the report for Charles County, and field work was carried on for that purpose from that date to December 8, 1909.

Again from July 20 to August 11, 1910, while the house boat *Oyster* was anchored in the mouth of the Patuxent River for the purpose of carrying on the oyster survey operations in the bay shore waters of Dorchester County, a number of days when work could not be done in the open bay were employed in checking up deficiencies in the description of stations required for the forthcoming publications of both Charles and St. Marys counties.

The large amount of office work connected with the "oyster survey" of Charles County, including computations and drafting necessary for the preparation for publication of the oyster charts and the technical records, was continued intermittently with the office work of other counties from the beginning of the field work in Charles County to the time of filing of the certified oyster charts and technical reports in the archives of the Commission and with the clerk of the circuit court of Charles County on January 27, 1911.

STATISTICS. ^a

Landmarks and triangulation signals erected.....	37
Monuments planted to mark triangulation stations.....	37
Triangulation stations occupied for observations of horizontal angles.....	35
Old triangulation stations recovered.....	3
New triangulation stations established.....	39
Total old and new triangulation stations marked and described.....	42
Linear miles of shore line covered by triangulation (approximate).....	32
Square miles covered by triangulation (approximate).....	20
Hydrographic projections prepared and completed as records of oyster boundaries.....	3
Triangles computed.....	80
Geographic positions computed.....	40
Corners of oyster boundaries established by computation.....	78
Back azimuths and distances computed from corners of boundaries to triangulation stations.....	234
Descriptions of triangulation stations prepared for publication.....	42
Descriptions of oyster boundaries prepared for publication.....	15
"Charts of Natural Oyster Bars" prepared for publication.....	1
Progress map prepared for publication.....	1

GENERAL REMARKS.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore, of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

^a These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of Charles County, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland. See Appendix D of this publication for "Statistics of results of combined operations of the Government and the State."

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unfailing tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the Commission, who, as editor of the Commission's annual report and Commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Mr. Benjamin K. Green, treasurer of the Commission, who has looked after the equipment and commissary of the house boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Mr. Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

To Mr. Thomas H. Robinson, counsel to the Commission, for courteously furnishing valuable information relating to county boundaries.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts ^a of the natural oyster bars of Charles County, published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, are grouped on one sheet covering a portion of the waters of the upper Patuxent River and all of the waters of the Wicomico River; including all oyster-producing bottoms in Charles County. They are published on a scale of 1 part in 20,000 (approximately $3\frac{1}{6}$ inches to a statute mile) and are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the Circuit Court of Charles County and in the office of the Commission at Annapolis, as required by the oyster laws of Maryland.

In addition to the oyster bar and other boundaries, the charts show the location and name of all landmarks (U. S. Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography ^b necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the heading "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a particular

^a These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

^b Much of the detail of the inshore topography was obtained from the excellent map of Charles County, prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the U. S. Geological Survey.

oyster bar or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shell fish industries. The 1-fathom contour (6 feet) and the 5-fathom curve (30 feet) correspond in a general way to the inner and outer limits of all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with Charles County are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart within the boundaries of the different shell fish bottoms.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Charles County, like those for Anne Arundel, Somerset, Wicomico, Worcester, and Calvert counties, have been prepared under the direction of the hydrographic engineer of the Commission. These charts are constructed on polyconic projections and are based on the United States standard datum of the Coast and Geodetic Survey. They are made on the scales of 1 part in 5,000 or 1 part in 10,000, as the needs of oyster culture may require. Anne Arundel County required 13 leasing charts; Somerset County, 12 charts; Wicomico County, 2 charts; Worcester County, 3 charts; Calvert County, 5 charts; and Charles County, 2 charts, to cover their oyster bottoms.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts

have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to the area under consideration, and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as possible.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in the Marine Bank Building at Baltimore.

PROJECTIONS.

The polyconic projections^a covering Charles County waters are 3 in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, but the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission were plotted by the draftsman of the Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the archives of the Shell Fish Commission.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the United States Coast and Geodetic Survey in Charles County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress maps^b accompanying the first and second annual reports of the Maryland Shell Fish Commission were prepared under the direction of the hydrographic engineer of the Commission. They are on the scale of 1 part in 400,000, and show the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey.

^a For the scheme of these projections see the progress map at the end of this publication.

^b These maps and reports can be obtained by application to Maryland Shell Fish Commission, Marine Bank Building, Baltimore, Md.

BOUNDARIES OF THE COUNTY WATERS.^a

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line^b between the waters "within the territorial limits" of Charles County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the "oyster" charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Patuxent River waters of Charles County.—Following the boundary line between Charles County and Prince Georges County along the middle of Swanson Creek as laid down on "Chart No. 26, Natural Oyster Bars, Maryland," to a point defined by the intersection of this boundary line with the boundary line of Calvert County in Patuxent River; thence along the boundary line between Calvert and Charles counties in Patuxent River as laid down on "Chart No. 26, Natural Oyster Bars, Maryland," to a point defined by the intersection of this boundary line with the boundary line between Charles and St. Marys counties off the entrance to Indian Creek; thence along the boundary line between Charles and St. Marys counties in the middle of Indian Creek as laid down on "Chart No. 26, Natural Oyster Bars, Maryland."

Wicomico River waters of Charles County.—Following the boundary line between Charles County and St. Marys County along the middle of Wicomico River as laid down on "Chart No. 26, Natural Oyster Bars, Maryland," from the upper end of Wicomico River, as shown on said chart, to a point at the mouth of Wicomico River defined by the intersection of this boundary line with the straight line between the center point of Cobb Point Bar Light defined by latitude $38^{\circ} 14' 33.3''$ and longitude $76^{\circ} 49' 36.9''$ and a point on the northwest end of St. Catherine Island defined by latitude $38^{\circ} 14' 28.9''$ and longitude $76^{\circ} 48' 10.9''$; thence along a straight line dividing the "waters within territorial limits of county" and the "waters of Potomac River under joint jurisdiction of Maryland and Virginia as to fisheries" to the center point of Cobb Point Bar Light defined by latitude $38^{\circ} 14' 33.3''$ and longitude $76^{\circ} 49' 36.9''$; thence along a line following Cobb Point Bar, as laid down on "Chart No. 26, Natural Oyster Bars, Maryland," to a point located on Cobb Point defined by latitude $38^{\circ} 15' 17.5''$ and longitude $76^{\circ} 50' 33.4''$; thence along the mean low water line of the Maryland shore of Potomac River or a line across the mouth of all inlets less than 100 yards in width, as the case may be, and then continuing along the Maryland shore of Potomac River, crossing the mouth of Potomac River entrances of Neals Sound, around Swan Point, and crossing the mouth of Cuckold Creek and all other creeks, bays, and inlets of Potomac River under the sole jurisdiction of Maryland, to the intersection of this line with the boundary line between Charles County and Prince Georges County.^c

^a For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, Superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

^b See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

^c Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the United States Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Baltimore," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county and the waters contiguous to but not within the territorial limits of adjacent counties.

This boundary line has been delineated on the "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and is technically described and defined as follows:

Commencing at a point located at the mouth and near the middle of Wicomico River defined by the intersection of the boundary line between Charles County and St. Marys County as laid down on "Chart No. 26, Natural Oyster Bars, Maryland," and the straight line between the center point of Cobb Point Bar Light defined by latitude $38^{\circ} 14' 33.3''$ and longitude $76^{\circ} 49' 36.9''$ and a point on the northwest end of St. Catherine Island defined by latitude $38^{\circ} 14' 28.9''$ and longitude $76^{\circ} 48' 10.9''$; thence along a straight line dividing the "waters within territorial limits of county" and the "waters of Potomac River under joint jurisdiction of Maryland and Virginia as to fisheries" to the center point of Cobb Point Bar Light defined by latitude $38^{\circ} 14' 33.3''$ and longitude $76^{\circ} 49' 36.9''$; thence along a line following Cobb Point Bar as laid down on "Chart No. 26, Natural Oyster Bars, Maryland," to a point located on Cobb Point defined by latitude $38^{\circ} 15' 17.5''$ and longitude $76^{\circ} 50' 33.4''$; thence along the Maryland shore of the Potomac River across the entrances to Neals Sound, Cuckold Creek, and all other sounds, bays, creeks, or inlets under the sole jurisdiction of Maryland as to fisheries, to the intersection of this line with the boundary line between Charles County and Prince Georges County.^c

^a Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION.

The oyster laws of Maryland authorizing the survey to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of location and character of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking a landmark has only an indefinite idea of its location. They gradually proceed from description of the general locality of a landmark to the descriptions of its immediate surroundings. This is followed by specific details of the character of the center and reference marks and a "round" of reference angles and distances which in themselves frequently contain enough information to furnish an independent and reliable location of the triangulation station.

METHOD OF DESCRIBING TRIANGULATION STATIONS.

The separate descriptions of triangulation stations should not be used without reading the following explanation of the method of describing the triangulation stations, as it contains certain details that are common to all the landmarks described in this publication and which are omitted in the separate descriptions as being needless repetitions:

Name.—The title at the top of each separate description is the name by which the landmark or triangulation station is known and designated in all work and published oyster records or oyster charts of both the Government and State. The selection of the name is usually left to the triangulator establishing the station, and it may or may not have geographic or other significance in reference to the locality.

General locality.—Under this heading is given the general locality of the landmark in reference to well-known and prominent natural or artificial features, such as the nearest body of water, town, river, steamer wharf, well-defined point of land, church, or any other feature that is likely to remain both permanent and prominent.

This heading also covers a reference to the published chart or map which shows the location of the station most clearly. Nearly all the triangulation stations described in this publication are plainly indicated by name and a triangulation symbol on the published charts of oyster bars of Maryland. In this case they are referred to by serial number only, the words "charts of oyster bars of Maryland" being omitted to avoid needless repetition. These published oyster charts are on the large scale of 1 part in 20,000 (approximately $3\frac{1}{6}$ inches to a statute mile) and show the location of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Immediate locality.—Under this heading is given the description of the "observed station" in reference to its immediate surroundings. This is supposed to include a statement of the station's estimated elevation above high water or some other well-defined level of the locality, such as a road or house; the character of the ground on which it is located, such as marsh land, sand beach, cultivated field, or meadow; estimated bearings in points of the compass and estimated distances in yards *from* (not *to*) easily recognized features, such as extreme end of point, edge of bluff, bank of creek, line of telephone poles, shore line, barn, house, fence, ditch, trees, or any other definite detail, such as being on range with the tangent of an island and a church; and so forth.

When a standard monument has been established near the station as a "reference station," this heading also covers a statement of the true bearing of the monument in degrees and minutes and its measured distance in meters, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached and might be mistaken for the center mark of the "observed station" unless special attention is called to it.

The distinction between the "observed station" and "reference station" should be carefully noted by anyone making use of the description of stations for any future surveying operations.

The "observed station" is located at the particular triangulation point covered by the description of stations, and is the one whose geographic position is first computed, as it is the point which was "occupied" and "observed on" for horizontal angles. However, in spite of the primary importance of the location of the "observed station," it will be noted from the description of stations that frequently it is not marked as well as the "reference station," and in many instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate "observed stations" on edges of banks and ends of points of land, which in the tide-water section of Maryland generally means they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the great need of "reference stations," if the frequent reestablishment of a new framework of triangulation is to be avoided.

The chief reason and need for the establishment of the "reference station," or secondary station, as it might be well named, is explained in the preceding paragraph, but in several instances other reasons, such as the location of the "observed station"

on an unstable sand dune, in a cultivated field, in front of a residence, or other places objectionable to the landowner, have led to establishment of "reference stations." The location of the "reference station" in relation to the "observed station" is fixed for plotting on charts or for computation of its geographic position by checked measurements of its distances and azimuth from the "observed station."^a

Marks.—Under this heading is given a description of the character of the permanent monuments or other marks of the location of the "observed station," and of the "reference station" where one has been established.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground, unless otherwise stated.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

References.—Under this heading are given the "rounds" of directions and distances to all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described, this, if possible, being a light-house, church spire, or other permanent and prominent point. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing^b of the initial object is always given in parentheses alongside its name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by horizontal angles or for the relocation of corner buoys of oyster-bar boundaries by the method of compass directions described in this publication under the heading of "Boundaries of oyster bars."

^a Geographic coordinates (latitude, longitude, distance, and azimuth) relating to any of the "observed stations" or of the "reference stations" described in this publication can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

^b The mean magnetic variation for Charles County was $5^{\circ} 20'$ west of north in 1910 and increasing at the rate of $4'$ yearly.

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of angular measure with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

BARBER.

General locality.—Northeastern shore of Wicomico River about $\frac{3}{4}$ mile north-northeast of Stoddard Point. (See Chart No. 26.)

Immediate locality.—Observed station is on grass land about 2 feet above high-water mark, 3 yards north of shore, 20 yards west of trees which extend inland along creek, 4 yards southwest by west of a corner of a fence and 15 yards southeast of another corner of a fence.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—	°	'	"	
"Stoddard" (S $6^{\circ} 46'$ W)	0	00	00	1 $\frac{1}{8}$ miles.
Left chimney of Stoddard house	3	27		1 $\frac{1}{8}$ miles.
Near peak of roof between two chimneys	45	15		1 $\frac{1}{2}$ miles.
Chimney on left end of small house	62	54		1 $\frac{1}{2}$ miles.
Nail in blaze in top fence rail	136	06		10.62 meters.
Nail in blaze in cedar tree (5 inches diameter)	155	29		10.75 meters.
Nail in blaze in top of chestnut fence post	245	24		3.43 meters.
Nail in blaze in persimmon tree (5 inches diameter)	259	16		13.94 meters.
Tangent of point	290	13		$\frac{1}{4}$ mile.
Near large chimney of negro quarters	302	07		1 $\frac{1}{2}$ miles.

UPPER.

General locality.—Southwestern shore of Wicomico River on Stoddard Point (upper point) about $2\frac{1}{4}$ miles north-northwest of Mills Point. (See Chart No. 26.)

Immediate locality.—Observed station is on a long narrow point about 2 feet above high-water mark, 5 yards south of side of point, 8 yards northwest of side of point, 38 yards west of high-water mark on middle of point and 138 yards west by north of high-water mark on extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—	°	'	"	
"Stoddard" (S $27^{\circ} 38'$ E)	0	00	00	$\frac{1}{2}$ mile.
Right chimney of Stoddard house	9	12		$\frac{1}{2}$ mile.
Left peak of roof of barn	33	02		$\frac{1}{2}$ mile.
Left chimney of old house	49	20		$\frac{1}{2}$ mile.
Tangent of next point	141	07		$\frac{3}{8}$ mile.
Right chimney of house on ridge	179	15		3 miles.
Chimney outside small house on opposite shore	213	28		1 $\frac{1}{4}$ miles.
Near corner post of piazza of large house	247	47		1 $\frac{3}{8}$ miles.
Chimney top of Key house	296	04		1 $\frac{1}{2}$ miles.

KEY.

General locality.—Northeastern shore of Wicomico River on a high bluff about 1 mile north of Cohouck Point. (See Chart No. 26.)

Immediate locality.—Observed station is about 30 feet above high-water mark in an orchard, about 24 yards northeast of edge of bank, 49 yards north of edge of bank, 15 yards east of edge of bank, 130 yards south-southwest of negro quarters and 130 yards west of fence which incloses an orchard.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—	o	/	//	
"Stoddard" (S 70° 48' W).....	0	00	00	1½ miles.
Near corner of near chimney on Stoddard house.	0	29	..	1¼ miles.
Near corner of near chimney of small house....	15	05	..	1¾ miles.
Peak of roof between two chimneys on house...	17	13	..	2 miles.
Peak of roof of very large barn.....	56	52	..	3 miles.
Chimney on middle of roof on two-story house..	62	06	..	3 miles.
Near corner of near chimney of negro's quarters.	116	54	..	130 yards.
Nail in blaze in apple tree (12 inches diameter)..	135	58	..	22.15 meters.
Chimney of Key house.....	164	37	..	¼ mile.
Nail in blaze in apple tree (14 inches diameter).	168	57	..	13.39 meters.
Peak of roof of large barn.....	259	16	..	½ mile.
Nail in blaze in apple tree (12 inches diameter).	281	25	..	7.94 meters.
Peak of roof of house on piles.....	347	23	..	1¾ miles.
Between two chimneys of large brick house on hill.....	357	45	..	2½ miles.

STODDARD.

General locality.—Western shore of Wicomico River about ½ mile south-southeast of Stoddard Point and 1 mile west-northwest of Cohouck Point. (See Chart No. 26.)

Immediate locality.—Observed station is on gravel, grass, and shell point, near a lone gum tree, about 2 feet above high-water mark, 6 yards south-southwest of side of point, 6 yards north of side of point, 10 yards west of extreme end of point and 158 yards east-northeast of Stoddard house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—	o	/	//	
"Upper" (N 26° 37' W).....	0	00	00	½ mile.
Outside chimney of small house.....	23	08	..	1½ miles.
Peak of front gable of large house on ridge....	52	54	..	1¾ miles.
Chimney on top of Key house.....	94	47	..	1½ miles.
Chimney outside of two and a half story house..	153	58	..	2¾ miles.
Right chimney of large house.....	172	38	..	2 miles.
Peak of roof of house on Chaptico Wharf.....	180	19	..	2½ miles.
Chimney top of house on piles.....	228	37	..	½ mile.
Near corner of chimney on Stoddard house....	284	44	..	158 yards.
Nail in blaze in pear tree (24 inches diameter)..	315	29	..	4.58 meters.
Nail in blaze in pear tree (4 inches diameter)..	349	47	..	9.41 meters.

COHOUCK.

General locality.—Eastern shore of Wicomico River on Cohouck Point on the northern side of entrance to Chaptico Bay. (See Chart No. 26.)

Immediate locality.—Observed station is on Cohouck Point, about 6 feet above high-water mark, 12 yards east of edge of bank, 35 yards south of edge of bank, 85 yards northeast of extreme point and about 25 yards north of marsh.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—	o	/	//	
"Key" (N 3° 29' E).....	0	00	00	¾ mile.
Nearest chimney on negro quarters.....	0	27	..	1 mile.
Near peak of roof of barn.....	26	38	..	1 mile.
Chimney outside near end of two and a half story house.....	128	58	..	¾ mile.
Right chimney of Lyon house near Mills Point...	171	29	..	1½ miles.
Chimney on flat roof house near mouth of Bowmans Creek.....	226	56	..	2 miles.
Chimney on far end of house.....	261	43	..	1¾ miles.
Chimney on house on piles.....	270	53	..	1½ miles.
Peak of front gable of house on ridge.....	352	51	..	2¼ miles.

HAYDEN.

General locality.—Western shore of the Wicomico River about $1\frac{3}{8}$ miles west of Cohouck Point. (See Chart No. 26.)

Immediate locality.—Observed station is surrounded by water bushes on marshy land, about 1 foot above high water, 5 yards northwest of shore and 17 yards southeast of line of trees on top of bank. Cement monument marking reference station is 11.50 meters $N 54^{\circ} 34' W$ of observed station.

Marks.—Observed station is nail in stub with top 3 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fact" (S $41^{\circ} 35' E$).....	0	00	00	$1\frac{3}{8}$ miles.
Between two main chimneys of large house be-				
low Chaptico Wharf.....	5	11		$2\frac{3}{8}$ miles.
West roof peak of house on Chaptico Wharf....	6	51		$2\frac{3}{4}$ miles.
Chimney on middle of square house.....	65	06		$\frac{5}{8}$ mile.
Nail in blaze in cedar tree (18 inches diameter).	124	14		23.45 meters.
Nail in blaze in locust tree (8 inches diameter)	155	23		16.55 meters.
REFERENCE STATION.....	167	01	20	11.51 meters.
Nail in blaze in oak tree (8 inches diameter)....	213	29		18.74 meters.
Chimney on Key house.....	275	45		$1\frac{3}{4}$ miles.
Chimney of Maddox house.....	344	28		$3\frac{1}{4}$ miles.
Right chimney outside of old house.....	354	31		$1\frac{5}{8}$ miles.

PERRY.

General locality.—Southeastern shore of Chaptico Bay, about 1 mile northeast of Mills Point and $\frac{5}{8}$ mile southeast of Cohouck Point. (See Chart No. 26.)

Immediate locality.—Observed station is in an open field, about 20 feet above high-water mark, 8 yards northwest of edge of bank, 9 yards south-southwest from edge of gully in bank, 5 yards south of edge of bank of gully, and about 150 yards north-northeast of creek.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fact" (S $51^{\circ} 10' W$).....	0	00	00	1 mile.
Chimney on right end of house.....	5	41		$2\frac{3}{8}$ miles.
Chimney on flat-roof house.....	15	03		$2\frac{1}{2}$ miles.
Left chimney of Crane house.....	31	37		$3\frac{5}{8}$ miles.
Nail in blaze in locust tree (3 inches diameter).	42	34		10.49 meters.
Nearest chimney on larger part of double brick				
house.....	42	50		$3\frac{5}{8}$ miles.
Left chimney of house on piles.....	55	28		$1\frac{3}{4}$ miles.
Near peak of roof on house.....	62	53		2 miles.
Near corner of near chimney of Stoddard house.	66	59		2 miles.
Nail in blaze in locust tree (3 inches diameter).	81	40		8.44 meters.
Peak of front gable of house on ridge.....	113	51		3 to 4 miles.
Nail in blaze in locust tree (8 inches diameter).	136	40		5.95 meters.
Near chimney of large house on ridge.....	169	08		$1\frac{5}{8}$ miles.
Chimney outside of two-and-a-half-story house.	289	15		150 yards.

BURR.

General locality.—Western shore of Wicomico River directly opposite mouth of Chaptico Bay and $\frac{3}{4}$ mile north of Bowmans Creek. (See Chart No. 26.)

Immediate locality.—Observed station is on hard ground between a sloping bank 10 feet high covered with trees and a marshy shore, about 2 feet above high-water mark, 18 yards northwest of extreme point, 23 yards north of shore, 17 yards southwest of shore, and 9 yards southeast of bottom of bank.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fact" (S 65° 59' E).....	0	00	00	1¼ miles.
Between two chimneys of large house on ridge.	16	39	..	4¾ miles.
West end of peak of roof of house on Chaptico Wharf.....	17	15	..	2½ miles.
Right chimney of two-and-a-half-story house...	72	21	..	1¼ miles.
Chimney in middle of large house.....	88	21	..	1½ miles.
Nail in blaze in persimmon tree (11 inches diameter).....	97	25	..	7.67 meters.
Nail in blaze in persimmon tree (9 inches diameter).....	192	56	..	2.60 meters.
Nail in blaze in persimmon tree (10 inches diameter).....	236	32	..	3.86 meters.
Main chimney of Key house.....	293	03	..	2¼ miles.
Chimney on Maddox house.....	358	28	..	3½ miles.

FACT.

General locality.—Eastern shore of Wicomico River on Mills Point on south side of mouth of Chaptico Bay. (See Chart No. 26.)

Immediate locality.—Observed station is on a long point covered on the southern side with gum and cedar trees, about 10 feet above high-water mark, 23 yards from extreme end of top of bank, 6 yards north of edge of bank, and 8 yards southeast of edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cobb Point Bar Light" (S 7° 13' E).....	0	00	00	6¼ miles.
Nail in blaze in cedar tree (7 inches diameter)...	5	07	..	6.20 meters.
Nail in blaze in oak tree (28 inches diameter)...	56	16	..	6.37 meters.
Chimney on ell end of Stoddard house.....	157	08	..	1¾ miles.
Chimney on Key house.....	199	54	..	2½ miles.
Near peak of roof of large house.....	274	25	..	¼ mile.
Nail in blaze in cedar tree (6 inches diameter).	301	45	..	16.26 meters.
Near chimney of large house near shore.....	317	53	..	¾ mile.
West end of peak of house on Chaptico Wharf..	342	53	..	¾ mile.

BOWMAN.

General locality.—Western shore of Wicomico River at northeast side of mouth of Bowmans Creek and 1½ miles west by south of Mills Point. (See Chart No. 26.)

Immediate locality.—Observed station is surrounded by water bushes on point of land about 1½ feet above high water, 14 yards east of high-water mark, 16 yards north of extreme end of point, 20 yards northeast of side of point, 20 yards south of several cedar trees, and about 150 yards south of a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sacred Heart Church Spire" (S 62° 50' E)...	0	00	00	4¾ miles.
Chimney on end of long house.....	10	37	..	3¼ miles.
Chimney of Lyon house.....	13	56	..	3¼ miles.
Nail in blaze in cedar tree (7 inches diameter).	59	04	40	8.88 meters.
Chimney on square house.....	76	25	..	¼ mile.
Crane house.....	168	10	..	2 miles.
Nail in blaze in cedar tree (6 inches diameter).	216	10	00	18.37 meters.
Nail in blaze in cedar tree (7 inches diameter).	232	40	30	17.58 meters.
Chimney on near end of house.....	263	40	..	½ mile.
Peak of roof between two chimneys.....	357	27	..	2¼ miles.

EEDLING.

General locality.—Western shore of Wicomico River about $1\frac{1}{4}$ miles southwest of Mills Point and about 1 mile southeast of mouth of Bowmans Creek. (See Chart No. 26.)

Immediate locality.—Observed station is in a shell-covered cultivated field, about 10 feet above high-water mark, 37 yards southwest of shell and gravel beach, 88 yards west-northwest of extreme end of point, and 79 yards north of a ditch in marsh. Cement monument marking reference station is 23.99 meters N $89^{\circ} 56'$ W of observed station.

Marks.—Observed and reference stations are marked by the center point of the triangles on standard cement monuments.

References.—

	°	'	"	
"Fact" (S $39^{\circ} 15'$ W).....	0	00	00	$1\frac{1}{4}$ miles.
Nail in blaze in gum tree (20 inches diameter)..<	2	07	50	26.06 meters.
Near peak of roof of house on Chaptico Wharf..	42	05	..	$1\frac{3}{8}$ miles.
Chimney outside near end of house on hill.....	44	24	..	$2\frac{3}{8}$ miles.
Nail in blaze in cedar tree (3 inches diameter)..<	49	54	40	25.75 meters.
REFERENCE STATION.....	50	48	55	23.99 meters.
Chimney on right of ell of a house.....	60	12	..	2 miles.
Near peak of roof of Eedling house.....	265	55	..	$\frac{3}{8}$ mile.
Nail in blaze in oak tree (24 inches diameter)..<	331	27	40	33.99 meters.

FARR.

General locality.—Eastern shore of Wicomico River about $1\frac{1}{4}$ miles south-southeast of Mills Point and $\frac{1}{4}$ mile north of the mouth of Manahowick Creek. (See Chart No. 26.)

Immediate locality.—Observed station is about 10 feet above high-water mark, 5 yards east by south of edge of bank, 32 yards north-northwest of several pine trees at fish shanty near edge of bank, 22 yards south by east of other trees, and 300 yards west by north of a large house.

Marks.—Observed station is center point of triangle on standard cement monument buried 16 inches below surface of ground with nail in stub at surface.

References.—

	°	'	"	
"Cobb Point Bar Light" (S $2^{\circ} 35'$ E).....	0	00	00	$5\frac{1}{4}$ miles.
"Rock Point Catholic Church Cross".....	8	03	40	$3\frac{1}{4}$ miles.
Chimney on left side of house.....	42	41	..	$1\frac{3}{4}$ miles.
Left chimney of Crane house.....	113	40	..	$4\frac{1}{2}$ miles.
Left peak of house on Chaptico Wharf.....	153	08	..	$\frac{1}{2}$ mile.
Left chimney of house on Mills Point farm.....	168	34	..	$1\frac{1}{4}$ miles.
Right chimney on Maddox house.....	242	28	..	2 miles.
Right corner of large house.....	292	33	..	$\frac{1}{4}$ mile.
Near corner of fish shanty.....	338	27	..	23.69 meters.

GUST.

General locality.—Western shore of Wicomico River on Windmill Point about $\frac{3}{4}$ mile north of the mouth of Hedneys Creek and opposite mouth of Manahowick Creek. (See Chart No. 26.)

Immediate locality.—Observed station is on shell and gravel point, bordered by persimmon and cedar trees, about 2 feet above high-water mark, 12 yards northwest of shore, 16 yards south of shore, and 28 yards west-southwest of shore on extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fact" (N $20^{\circ} 09'$ E).....	0	00	00	$1\frac{1}{2}$ miles.
Nail in blaze in persimmon tree (8 inches diameter).....	6	22	..	7.95 meters.
Near peak of roof of house on Chaptico Wharf..	35	32	..	$1\frac{1}{4}$ miles.
Chimney on left side of large house.....	58	18	..	$1\frac{3}{8}$ miles.
Chimney on middle of Lyon house.....	101	24	..	$1\frac{3}{4}$ miles.
Near peak of roof of house with two chimneys..	171	43	..	$\frac{5}{8}$ mile.
Nail in blaze in cedar tree (4 inches diameter)..<	204	14	00	5.90 meters.
Nail in blaze in cedar tree (10 inches diameter)..<	301	03	10	16.18 meters.

LYON.

General locality.—Eastern shore of Wicomico River on a point about $\frac{1}{4}$ mile north of Bramleigh Creek and 2 miles north by east of Rock Point. (See Chart No. 26.)

Immediate locality.—Observed station is on a point of land between the Lyon residence and edge of bank, 100 yards north of small pond which is fringed on river side with cedar trees, about 4 yards north of a bird house on a post, 19 yards east-northeast of most prominent point of bank, 15 yards east-southeast of side of bank, 16 yards north-northeast of another side, and 12 yards south-southwest of a fence.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Weiss" (S 25° 47' E).....	0	00	00	1¼ miles.
Nail in blaze in cedar post of bird house sup- port.....	51	15	20	3.67 meters.
Nail in blaze in pear tree (6 inches diameter)...	58	00	50	11.74 meters.
Chimney of house.....	129	14	..	1½ miles.
Left chimney of Crane house.....	148	52	..	5¼ miles.
Between two chimneys of large brick house....	159	59	..	3½ miles.
Near peak of roof between two chimneys of large house.....	171	56	..	3¾ miles.
West end of peak of roof of house on Chaptico Wharf.....	186	23	..	1¾ miles.
Corner of fence.....	198	08	..	14.15 meters.
Near corner of house.....	247	11	..	22.01 meters.
Right corner of small house.....	295	38	..	24.59 meters.
Nail in blaze in locust tree (4 inches diameter)...	302	02	10	8.82 meters.
Right corner of shed.....	336	36	..	14.98 meters.

SACRED HEART CHURCH SPIRE (BUSHWOOD).

General locality.—Easterly side of Wicomico River on high land about $1\frac{1}{2}$ miles inland, north by east of Bushwood Wharf. (See Chart No. 26.)

Immediate locality.—Observed station is steeple of Sacred Heart Church near Bushwood.

Marks.—Observed station is center of cross on steeple.

References.—None necessary.

HEDNEY.

General locality.—Western shore of Wicomico River on first point above mouth of Charleston Creek and about $1\frac{3}{4}$ miles northwest of White Point. (See Chart No. 26.)

Immediate locality.—Observed station is about 25 feet above high-water mark, 16 yards west-southwest of edge of bank, 139 yards north of large tree at edge of bank, 85 yards north of oak tree at edge of bank, 155 yards east-northeast of gum tree 20 inches diameter on bank of a pond, and about $\frac{1}{8}$ mile east-southeast of a house among trees.

Marks.—Observed station is center point of triangle on standard cement monument with top buried 12 inches below the surface of the ground. Surface mark is nail in stub with top 5 inches above surface of ground.

References.—

	°	'	"	
"Sacred Heart Church Spire" (N 86° 31' E)...	0	00	00	4½ miles.
Near corner of nearest chimney of four on a large house on hill.....	7	11	..	4½ miles.
Right chimney of a large house.....	13	03	..	2 miles.
Middle of island at end of White Point Bar....	38	45	..	1½ miles.
Nail in blaze in oak tree (48 inches diameter)...	50	28	00	73.16 meters.
Nail in blaze in walnut tree (36 inches diam- eter).....	84	52	30	115.63 meters.
Middle of gum tree.....	147	46	30	138.47 meters.
Near peak of roof between two chimneys.....	239	48	..	¾ mile.
Near chimney on large house.....	312	19	..	1½ miles.
Chimney of Lyon house.....	352	40	..	1½ miles.

CHARLES.

General locality.—Western shore of Wicomico River on first point south of entrance to Charleston Creek, and $1\frac{1}{4}$ miles north of Rock Point. (See Chart No. 26.)

Immediate locality.—Observed station is on a small marshy point about 6 inches above high-water mark and 18 yards east of pine woods on a bank 10 feet above high water. Cement monument marking reference station is 15.56 meters N $57^{\circ} 10'$ W of observed station.

Marks.—Observed station is nail in stub with top 2 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Hard" (S $17^{\circ} 38'$ E).....	0	00	00	$1\frac{1}{4}$ miles.
Nail in blaze in pine tree (10 inches diameter)...	47	51	..	28.46 meters.
Nail in blaze in pine tree (12 inches diameter)...	84	58	..	16.66 meters.
Nail in blaze in pine tree (7 inches diameter)...	134	22	..	16.87 meters.
REFERENCE STATION.....	138	28	10	15.56 meters.
West chimney on two-story house.....	265	53	..	$1\frac{1}{4}$ miles.
"Sacred Heart Church Spire (Bushwood)".....	268	03	50	$2\frac{3}{4}$ miles.
West chimney on Garner house.....	293	51	..	$1\frac{3}{4}$ miles.
West gable of house on Bushwood Wharf.....	300	07	..	2 miles.

WEISS.

General locality.—Eastern shore of Wicomico River on White Point, about 3 miles north by east of Cobb Point Bar Light. (See Chart No. 26.)

Immediate locality.—Observed station is on a bluff near small cedar trees, about 8 feet above high-water mark, 13 yards north of and 27 yards south of edges of bluff and 52 yards east of extreme point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Cobb Point Bar Light" (S $11^{\circ} 43'$ W).....	0	00	00	$3\frac{1}{8}$ miles.
Flagstaff on schoolhouse.....	40	41	20	$1\frac{1}{8}$ miles.
Nail in blaze in cedar tree (10 inches diameter). 54	03	10	..	42.29 meters.
Left chimney on two-story house.....	155	26	..	$\frac{3}{4}$ mile.
Nail in blaze in poplar tree (3 inches diameter). 181	46	..	..	6.24 meters.
"Sacred Heart Church Spire".....	216	56	30	$1\frac{3}{4}$ miles.
West chimney of Garner house.....	260	27	..	$\frac{5}{8}$ mile.
Nail in blaze in poplar tree (4 inches diameter). 266	27	50	..	37.80 meters.
West gable of house on Bushwood Wharf.....	284	26	..	$\frac{5}{8}$ mile.
Left chimney on two-story house.....	342	10	..	$2\frac{3}{8}$ miles.

BLAKISTONE.

General locality.—Eastern shore of Wicomico River, about $\frac{1}{4}$ mile southeast of Plowdens Wharf at Bushwood, and about 3 miles north-northeast of Cobb Point Bar Light. (See Chart No. 26.)

Immediate locality.—Observed station is on second bluff southeast of Bushwood Wharf, 15 feet above high-water mark, 15 yards southeast of a large dogwood tree, about 6 yards northeast of edge of bluff, 3 yards southwest of rail fence, about 15 yards southwest of an ice house near orchard, and 5 to 10 yards south to east of several small cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Prec" (S $18^{\circ} 42'$ W).....	0	00	00	2 miles.
"Rock Point Catholic Church Cross".....	51	28	30	2 miles.
Left peak of roof of wharf house.....	94	16	..	$1\frac{1}{8}$ miles.
Large tree.....	117	48	..	13.36 meters.
Chimney of Blakistone store.....	125	48	..	$\frac{1}{4}$ mile.
Near peak of roof of Blakistone house.....	176	32	..	250 yards.
Point of cupola on Ranahan house.....	191	45	..	$1\frac{3}{4}$ miles.
Near left corner of sill of ice house.....	233	15	..	14.15 meters.
Right lower corner.....	260	33	..	15.76 meters.
Near peak of roof.....	312	54	..	$\frac{1}{4}$ mile.

HARD.

General locality.—Western shore of Wicomico River on point of land known as Rock Point about 2 miles north by west of Cobb Point Bar Light. (See Chart No. 26.)

Immediate locality.—Observed station is on low point of land near several small cedar trees about 1 foot above high-water mark, 47 yards west of shore, 16 yards south of shore, 30 yards north of shore, about 80 yards northeast by north of Rock Point Wharf, and 170 yards northeast by east of Lancasters store.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cobb Point Bar Light" (S 10° 17' E).....	0	00	00	2 miles.
Northeast gable of wharf house.....	41	07	..	80 yards.
"Rock Point Catholic Church Cross".....	70	16	20	¼ mile.
South chimney on Lancaster store.....	88	53	..	170 yards.
Point of east gable on house.....	134	44	..	¼ mile.
"Sacred Heart Church Spire".....	239	04	20	3 miles.
Gable of house on wharf at Bushwood.....	256	00	..	1¾ miles.
West gable of house.....	293	06	..	2 miles.
West gable on one-story house.....	315	19	..	2¼ miles.
North chimney of two-story house.....	330	12	..	2½ miles.

ROCK POINT CATHOLIC CHURCH CROSS.

General locality.—Eastern shore of Wicomico River at Rock Point. (See Chart No. 26.)

Immediate locality.—Observed station is in settlement called Rock Point. It is on the larger of two similar buildings, the smaller one being the schoolhouse.

Marks.—Observed station is center point of cross on Rock Point Catholic Church.

References.—None necessary.

PREC.

General locality.—Eastern shore of Wicomico River on Bluff Point about 2 miles north-northeast of Cobb Point Bar Light. (See Chart No. 26.)

Immediate locality.—Observed station is about 10 feet above high-water mark, 34 yards southeast of nearest end of neck of Bluff Point, 29 yards south-southeast of shore, 16 yards northeast of shore, and 88 yards west by southwest of house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cobb Point Bar Light" (S 28° 37' W).....	0	00	00	2 miles.
Tangent of woods on Cobb Point.....	34	04	..	2 miles.
"Rock Point Catholic Church Cross".....	70	16	30	1¾ miles.
Nail in blaze in locust tree (3 inches diameter) ..	116	14	40	20.64 meters.
Left chimney of Garner house.....	148	42	..	1½ miles.
Nail in blaze in left one of twin locust trees (12 inches diameter).....	153	38	20	30.36 meters.
"Sacred Heart Church Spire".....	172	15	10	2¾ miles.
Near chimney of Sherrer house.....	228	37	..	88 yards.
Nail in blaze in poplar tree (6 inches diameter). 243	01	50	..	33.74 meters.
Nail in blaze in poplar tree (5 inches diameter). 282	00	40	..	27.71 meters.
Left chimney of cottage.....	298	22	..	½ mile.
Right chimney of Bailey house on St. Margarets Island.....	330	25	..	1½ miles.

CORNER.

General locality.—Western shore of Wicomico River on the eastern side of an island known as Cobb Point Neck about halfway between Cobb Point and the entrance to Neales Sound. (See Chart No. 26.)

Immediate locality.—Observed station is in a cultivated field on a bluff bordered with pine trees about 15 feet above high-water mark, 3 yards west of a wire fence running along edge of bluff and 21 yards east-northeast of a wire fence which separates cornfield from pine woods.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	'	"	
"Cobb Point Bar Light" (S 29° 39' E).....	0	00	00	1½ miles.
Nail in blaze in cedar tree (3 inches diameter)..	50	02	..	16.98 meters.
Nail in blaze in pine tree (8 inches diameter)..	111	43	..	21.41 meters.
Nail in blaze in pine tree (12 inches diameter).	135	20	..	33.22 meters.
Middle chimney of house.....	177	07	..	¼ mile.
"Catholic Church Cross".....	217	16	10	⅞ mile.
Left chimney of house on St. Margarets Island..	318	56	..	1½ miles.

ST. MARGARET 2.

General locality.—Northwestern side of Potomac River on the southwestern side of St. Margarets Island in the mouth of the Wicomico River about 1 mile northeast of Cobb Point Bar Light. (See Chart No. 26.)

Immediate locality.—Observed station is on a bluff about 12 feet above high-water mark, 15 inches northeast of edge of bluff, 86 yards northwest of cow shed, 129 yards south-southwest of several houses and 154 yards west-southwest of Bailey (large) house. Cement monument marking reference station is 79.19 meters N 46° 26' E of observed station and at corner of cow shed.

Marks.—Observed station is center of a stub in a 2½-inch tile pipe set in cement with top flush with ground. Reference station is center point of triangle of standard cement monument.

References.—

	0	'	"	
"Cobb Point Bar Light" (S 53° 22' W).....	0	00	00	1 mile.
Tangent of Cobb Point.....	45	13	..	1½ miles.
"Rock Point Catholic Church Cross".....	83	42	50	1¾ miles.
Chimney on left of Garner new house.....	129	40	..	2¾ miles.
"Sacred Heart Church Spire".....	143	27	50	4 miles.
REFERENCE STATION.....	173	04	15	79.19 meters.
Left chimney of Bailey house.....	194	51	..	150 yards.
Nearest chimney of small house on Bullock Island.....	220	26	..	1 mile.
Left chimney of small house on St. Catherine Island.....	258	32	..	1¼ miles.

COBB POINT BAR LIGHT.

General locality.—Northerly side of Potomac River at mouth of Wicomico River on the southeastern extremity of Cobb Point Bar. (See Chart No. 26.)

Immediate locality.—Observed station is on the end of Cobb Point Bar at the mouth of the Wicomico River.

Marks.—Observed station is center point of black lantern on screw pile structure known as "Cobb Point Bar Light."

References.—

	0	'	"	
"Blakiston Island Light" (S 61° 25' E).....	0	00	00	5 miles.

RIVER SPRINGS CATHOLIC CHAPEL CROSS.

General locality.—Northern side of Potomac River inland about $\frac{3}{4}$ mile north by west of River Springs. (See Chart No. 26.)

Immediate locality.—Observed station is on building known as River Springs Catholic Chapel.

Marks.—Observed station is center of cross on River Springs Catholic Chapel.

References.—None necessary.

SOUND.

General locality.—Northern shore of St. Catherine Sound about $2\frac{1}{4}$ miles east by north of Cobb Point Bar Light and $\frac{1}{4}$ mile east of Bullock Island. (See Chart No. 26.)

Immediate locality.—Observed station is about 15 feet above high-water mark, 35 yards north of edge of bank, 2 yards east of wire fence, 65 yards east of edge of bank, 57 yards south of southeast corner of fence of house yard, and 63 yards south by west of telephone pole line which is on the same side of the road.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Cobb Point Bar Light" (S $84^{\circ} 53'$ W).....	0	00	00	.....	$2\frac{1}{4}$ miles.
Right chimney of house on Bullock Island.....	8	24	..	.....	$\frac{1}{2}$ mile.
Near end of small chimney on large house.....	27	15	..	.....	1 mile.
Left corner post of fence.....	65	05	..	.....	Near.
Near corner of chimney of small house.....	86	25	..	.....	Near.
Near corner post of fence.....	100	58	..	.....	Near.
Right peak of roof of barn.....	115	20	..	.....	Near.
"River Springs Catholic Chapel Cross".....	148	31	10	.....	1 mile.
Chimney of Blakistone store.....	189	16	..	.....	$\frac{1}{2}$ mile.
Near chimney of Bailey house.....	217	59	..	.....	$\frac{1}{2}$ mile.
Chimney on smaller house on St. Catherine Island.....	323	03	..	.....	$\frac{3}{4}$ mile.

BAILEY.

General locality.—Northeastern shore of St. Catherine Sound, about $\frac{3}{4}$ mile east by north of eastern end of St. Catherine Island and 1 mile north of the Potomac River. (See Chart No. 26.)

Immediate locality.—Observed station is on shelly ground on Bailey property, about 5 feet above high-water mark, 10 yards northeast of high-water mark, 7 yards northeast of a wire fence, 35 yards south-southeast of corner of wire fence, 30 yards north-northwest of corner of wire and wooden fences, 25 yards north of Bailey house, and 40 yards west by south of corner of wooden fence.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Cobb Point Bar Light" (N $88^{\circ} 11'$ W).....	0	00	00	.....	$2\frac{5}{8}$ miles.
Nail in blaze in one of four cedar trees (3 inches diameter).....	13	29	..	.....	12.37 meters.
Nail in blaze in cedar tree (8 inches diameter).....	44	59	..	.....	27.82 meters.
Corner of wire fence.....	46	29	..	.....	32.06 meters.
Chimney on house.....	90	38	..	.....	150 yards.
"River Springs Catholic Chapel Cross".....	113	06	00	.....	1 mile.
Corner of wooden fence.....	175	52	..	.....	37.49 meters.
Chimney of Bailey house.....	203	26	..	.....	25 yards.
Junction of wire and wooden fences.....	254	35	..	.....	26.22 meters.
Left chimney of house on Waterloo Point.....	277	43	..	.....	$\frac{3}{4}$ mile.
Nail in blaze in first of six cedar trees.....	297	27	..	.....	10.76 meters.
Right chimney of small house on St. Catherine Island.....	348	02	..	.....	1 mile.

ST. CATHERINE.

General locality.—Southern shore of St. Catherine Sound, on the northern side of St. Catherine Island. (See Chart No. 26.)

Immediate locality.—Observed station is about 12 feet above high-water mark, 86 yards south of edge of bank, 49 yards west of line of young cedar trees, 198 yards northeast of a lone mulberry tree 3 feet in diameter, and 207 yards southeast of small house among trees.

Marks.—Observed station is center point of triangle on standard cement monument with top 12 inches below the surface.

References.—

	°	'	"	
"Cobb Point Bar Light" (N 81° 08' W).....	0	00	00	1 7/8 miles.
Right side of right chimney on small house.....	13	04	..	207 yards.
Left chimney of large house on St. Margarets Island	34	42	..	1 3/8 miles.
Right chimney of house on Bullock Island.....	66	01	..	1/2 mile.
Chimney of Blackistone house.....	117	39	..	3/8 mile.
"River Springs Catholic Chapel Cross".....	129	17	40	1 5/8 miles.
Left chimney of Bailey house.....	158	19	..	1/8 mile.
Right chimney of Young house on Waterloo Point.	207	48	..	7/8 mile.

WATERLOO.

General locality.—Southeastern shore of St. Catherine Sound, about 3/4 mile east-southeast of St. Catherine Island and about 1/4 mile north of Potomac River. (See Chart No. 26.)

Immediate locality.—Observed station is at top of rise in field, about 8 feet above high-water mark, 48 yards east by south of shore at a point where several mulberry trees stand, 43 yards south of large sugarberry tree, 19 yards south by east of wire-fence post, and 200 yards north of Young house on Waterloo Farm.

Marks.—Observed station is center point of triangle on standard cement monument, with top 12 inches below surface of ground.

References.—

	°	'	"	
"Sound" (N 18° 41' W).....	0	00	00	1 mile.
Near end of peak of Blackistone barn.....	3	02	..	1 mile.
"Sacred Heart Church Spire (Bushwood)"....	10	37	20	5 miles.
Peak of gable of Blackistone house at River Springs.....	21	54	..	3/8 mile.
Near peak of roof of Bailey house.....	31	01	..	3/4 mile.
Near peak of roof of Yates house.....	49	13	..	1/2 mile.
Near peak of roof of Quaid house.....	71	25	..	1/4 mile.
Near peak of house.....	92	31	..	1/2 mile.
Nail in blaze in apple tree (5 inches diameter)...	111	20	30	34.78 meters.
Nail in blaze 8-inch branch on apple tree (14 inches diameter).....	153	34	20	24.90 meters.
Nail in blaze in apple tree (6 inches diameter)...	203	50	00	26.18 meters.
Near peak of roof of Young house.....	206	57	..	200 yards.
Left tangent of St. Catherine Island.....	300	21	..	3/4 mile.
Right chimney of roof of house on Bullock Island.....	337	19	..	1 3/8 miles.
Near peak of roof of house.....	352	57	..	1 3/4 miles.

PRINCE.

General locality.—Western shore of Patuxent River, about $\frac{1}{4}$ mile north of mouth of Swanson Creek. (See Chart No. 26.)

Immediate locality.—Observed station is in pasture about 20 feet above high water, 15 yards northwest of edge of bank, 75 yards northeast of a grove of trees, and 100 yards southwest of another grove of trees. Locust trees form a fringe along edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Leitch" (S $83^{\circ} 01'$ E).....	0	00	00	$\frac{3}{4}$ mile.
Square chimney on house.....	0	02	..	$\frac{3}{4}$ mile.
Chimney on store at Buena Vista.....	19	15	..	$1\frac{3}{4}$ miles.
Chimney of Dr. Huggins house at Buena Vista..	21	07	..	$1\frac{3}{4}$ miles.
Nearest chimney on Gourley house on Hallow- ing Point.....	55	16	..	$2\frac{1}{2}$ miles.
Nail in blaze in locust tree (3 inches diameter)..	79	38	30	15.94 meters.
Nail in blaze in locust tree (4 inches diameter)..	110	13	30	14.55 meters.
Outside chimney on large house on hill.....	150	45	..	$\frac{3}{4}$ mile.
Near end of peak of roof.....	226	02	..	$\frac{3}{4}$ mile.
Middle of clump of trees.....	273	00	..	100 yards.
Chimney of house.....	311	04	..	$1\frac{3}{4}$ miles.
Nail in blaze in crotch of locust tree (6 inches diameter).....	350	39	10	19.27 meters.

LEITCH.

General locality.—Eastern shore of Patuxent River, on prominent point opposite mouth of Swanson Creek, given on chart as Gods Grace Point, but known locally as Leitchs Point. (See Chart No. 26.)

Immediate locality.—Observed station is on sand and grass land about 1 foot above high water and 3 yards north of straight line connecting two round points. It is about 13 yards northwest of the lower of these two points and 9 yards east of upper point. A creek 3 feet wide has its mouth about 19 yards east by south of the station. There are no permanent objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Prince" (N $83^{\circ} 00'$ W).....	0	00	00	$\frac{3}{4}$ mile.
Near end of corner peak of roof of large house on hill.....	25	02	..	$1\frac{3}{4}$ miles.
Near end of peak of wharf-house roof.....	77	46	..	$\frac{1}{4}$ mile.
Right chimney of house.....	183	32	..	$\frac{1}{8}$ mile.
Right chimney of Gourley house.....	253	58	..	2 miles.
Canning-house stack.....	277	22	..	2 miles.
"Catholic Church Cross".....	281	35	30	2 miles.
Chimney of small house.....	308	52	..	1 mile.
Right outside chimney of old house.....	328	43	..	$1\frac{1}{4}$ miles.
Right outside chimney of old house.....	343	05	..	$1\frac{1}{2}$ miles.

FODDER.

General locality.—Western shore of Patuxent River on the southern side of the mouth of Swanson Creek about 1 mile west-southwest of Leitch Wharf and $\frac{3}{4}$ mile west-northwest of Point Judith (locally known as Teague Point). (See Chart No. 26.)

Immediate locality.—Observed station is on the edge of cultivated land about 10 feet above high-water mark, 4 yards west of edge of bank, and 9 yards north of another edge. Cement monument marking reference station is 15.21 meters S $60^{\circ} 52'$ W of observed station.

Marks.—Observed station is center point of triangle on standard cement monument with a top 9 inches square and 8 inches above surface of ground. Reference station is center point of triangle on standard cement monument with a top about 8 inches square and 5 inches above surface ground.

References.—

	°	'	"	
"Prince" (N 25° 00' E).....	0	00	00	1/4 mile.
Near peak of large house on bluff.....	17	55	..	2 miles.
Right corner of house.....	24	08	..	1 3/4 miles.
Near peak of Leitch Wharf house.....	35	11	..	1 3/4 miles.
Left peak of Leitch house.....	48	37	..	1 3/4 miles.
Front peak of house at Buena Vista.....	75	00	..	1 3/4 miles.
Chimney outside left end of house on hill.....	87	16	..	2 miles.
Near peak of small house.....	101	33	..	3/8 mile.
Large chimney on small house.....	174	43	..	1 mile.
Left side of left chimney outside Bowling house.....	211	47	..	3/4 mile.
REFERENCE STATION.....	215	52	30	15.21 meters.
Left corner of house on top of hill.....	318	27	..	1 mile.

BUENA.

General locality.—Eastern shore of Patuxent River about 1 3/4 miles northeast of Benedict at place known as Buena Vista. (See Chart No. 26.)

Immediate locality.—Observed station is in a field on land adjoining house owned by S. V. Smith and occupied by Dr. Huggins. It is about 10 feet above high water, 8 yards east of edge of bank, and 12 yards south of a rail fence. Cement monument marking reference station is 11.11 meters N 5° 42' E of observed station and near fence.

Marks.—Observed station is nail in stub with top 2 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hallowing" (S 27° 22' W).....	0	00	00	1 1/4 miles.
Center of red roof on square house near Bene- dict.....	18	05	..	2 miles.
Canning-house stack.....	21	30	..	1 3/4 miles.
"Catholic Church Cross".....	29	04	10	1 3/4 miles.
Nail in blaze in locust tree (4 inches diameter).....	31	48	40	8.58 meters.
Left chimney of old house.....	66	15	..	3 miles.
Left chimney of old house.....	72	52	..	3 miles.
Nail in blaze on cherry tree (2 inches diam- eter).....	99	05	..	9.70 meters.
Peak of roof of large house.....	99	15	..	4 miles.
Chimney of house near Leitch Wharf.....	108	52	..	1 mile.
Nail in blaze on fence post.....	143	33	50	11.18 meters.
REFERENCE STATION.....	158	20	20	11.11 meters.
Near corner of house.....	159	44	..	25 yards.
Cherry tree on fence line (15 inches diameter).....	221	25	..	35 yards.
Double apple tree (30 inches diameter).....	290	54	..	59 yards.

TEAGUE.

General locality.—Western shore of Patuxent River on point on southern side of entrance to Swan-son Creek, locally known as Teague Point, and given on chart as Point Judith. (See Chart No. 26.)

Immediate locality.—Observed station is on gravel and grass land about 3 feet above high water, about 11 yards from south side, 16 yards from north-northeast side, and 75 yards west by north of extreme end of point. Bushes stand between station and north side of point. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Buena" (N 85° 24' E).....	0	00	00	1½ miles.
Tangent of Teague Point.....	20	00	..	75 yards.
Near corner of right chimney of Gourley house near Hallowing Point.....	65	45	..	1¼ miles.
Canning-house stack.....	106	18	..	1¼ miles.
Near end of peak of hotel.....	108	12	..	1¼ miles.
Left one of two ivy-covered chimneys.....	110	25	..	1 mile.
"Catholic Church Cross".....	114	11	10	1 mile.
Chimney on Slye House.....	130	30	..	2 miles.
Left chimney of house on hill.....	144	57	..	2 miles.
Tanget of high-water mark.....	168	00	..	75 yards.
Near end of peak of roof.....	223	41	..	1 mile.
Chimney on large house on hill.....	243	20	..	3 miles.
Left chimney on house.....	301	17	..	1 mile.
Near end of peak of roof on store at Buena Vista..	355	59	..	1¼ miles.

CATHOLIC CHURCH CROSS (BENEDICT).

General locality.—Western shore of upper Patuxent River in the town of Benedict. (See Chart No. 26.)

Immediate locality.—Observed station is on Catholic Church, located on the main street of the town of Benedict about one-fourth mile from the wharf.

Marks.—Observed station is center point of cross on church.

References.—None necessary.

CITY.

General locality.—Western shore of Patuxent River on Town Point about one-fourth mile north-northeast of Benedict steamboat wharf. (See Chart No. 26.)

Immediate locality.—Observed station is on gravel and shell point about 4 feet above high water, 12 yards northwest of the shore, 63 yards west-southwest of a shanty, about 100 yards west-southwest of extreme end of point, and 11 yards southeast of a slough. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hallowing" (S 51° 21' E).....	0	00	00	½ mile.
Windmill near Sheridan Point.....	21	39	..	3½ miles.
Two middle chimneys at Dowells.....	21	39	..	3½ miles.
Left tangent of peak of wharf-house roof.....	81	34	..	¼ mile.
Center of roof of square house.....	84	36	..	½ mile.
Canning-house stack.....	95	22	..	¼ mile.
Nearest ivy-covered chimney of old house.....	130	14	..	⅓ mile.
"Catholic Church Cross".....	142	58	50	¼ mile.
Left square chimney of house.....	245	42	..	1¾ miles.
Near end of peak of roof of Huggins house.....	280	54	..	1½ miles.
Near corner of shanty.....	300	44	..	63 yards.
Right chimney of Gourley house.....	339	20	..	¾ mile.
Chimney of old building behind wharf.....	352	01	..	¾ mile.

HALLOWING.

General locality.—Eastern shore of Patuxent River on point opposite Benedict, known locally as Holland Point, but given on charts as Hallowing Point. (See Chart No. 26.)

Immediate locality.—Observed station is on a rounded gravel and grass point about 250 yards south of wharf on Holland Point, about 2 feet above high water, 10 yards north of shore, 8 yards east of shore, and 15 yards outside of a group of locust trees, sugar-berry trees, and bushes.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"City" (N 51° 21' W).....	0	00	00	¾ mile.
Left end of peak of roof of wharf house on Holland Point.....	23	15	..	250 yards.
Chimney of store at Buena Vista.....	77	27	..	1¾ miles.
Nail in blaze in nearest one of group of four sugar-berry trees (each 8 inches diameter)...	92	24	..	12.88 meters.
Nail in blaze in sugar-berry tree (10 inches diameter).....	109	58	50	15.74 meters.
Nail in blaze in locust tree (4 inches diameter)...	167	55	40	11.90 meters.
Smokepipe on Trent Hall Wharf building.....	227	35	..	2¼ miles.
Outside chimney of detached house at Soth- orons.....	309	54	..	1½ miles.
Center of roof on square house.....	314	15	..	¾ mile.
Canning-house stack.....	333	16	..	½ mile.
"Catholic Church Cross".....	347	44	20	¾ mile.

INDIAN.

General locality.—Western shore of Patuxent River on north side of entrance to Indian Creek and about one-fourth mile below Benedict steamboat wharf. (See Chart No. 26.)

Immediate locality.—Observed station is about 3 feet above high water, 7 yards west of shore, 16 yards northeast of a fence and a line of trees, 13 yards southwest of a lone locust tree, about 250 yards to the south-southeast of a large square house, and 125 yards east-northeast of another house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sothoron" (S 23° 11' E).....	0	00	00	1 mile.
Nail in blaze in locust tree near fence (5 inches diameter).....	33	48	50	15.57 meters.
Nail in blaze in middle branch of locust tree (6 inches diameter).....	66	24	50	19.13 meters.
Square chimney on old house.....	137	23	..	1¼ miles.
Right chimney of square house.....	188	30	..	⅓ mile.
Near end of peak of roof of hotel.....	206	26	..	¼ mile.
Canning-house stack.....	213	22	10	¼ mile.
Nail in blaze in left branch of locust tree (5 inches diameter).....	225	28	..	12.90 meters.
Right tangent of Benedict Wharf.....	228	10	..	½ mile.
Chimney of house near "Buena Vista".....	245	58	..	2¼ miles.
Chimney of Gourley house.....	270	28	..	1 mile.
Windmill at Dowell's on Sheridan Point.....	344	48	..	4¼ miles.
Left of right chimney on Dowell house.....	344	48	..	4¼ miles.

DWARF.

General locality.—Eastern shore of Patuxent River about 2 miles north-northwest of Sheridan Point and about $1\frac{1}{2}$ miles southeast of Benedict on a point of land opposite the mouth of Indian Creek. (See Chart No. 26.)

Immediate locality.—Observed station is on sand and grass land about 1 foot above high-water mark, 6 yards northeast from extreme end of point, 4 yards east of one edge of shore, and 6 yards north of another edge of shore. Point on which station is located has a sugar-berry tree, several small locust trees and water bushes, and a pond behind bushes and trees about 100 yards to the east.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sothoron" (S $42^{\circ} 05'$ W).....	0	00	00	$\frac{3}{4}$ mile.
Nearest corner of top of nearest chimney on tenant house.....	80	31	..	2 miles.
Center of roof of square house.....	83	16	..	1 mile.
Nail in blaze in locust tree (4 inches diameter)...	93	38	30	4.22 meters.
Canning-house stack.....	95	03	33	$1\frac{1}{4}$ miles.
"Catholic Church Cross".....	99	03	10	$1\frac{1}{4}$ miles.
Left tangent of wharf.....	124	19	..	$\frac{3}{4}$ mile.
Nail in sugar-berry tree (10 inches diameter)....	152	38	30	8.94 meters.
Nail in blaze in locust tree (3 inches diameter)...	196	22	20	2.68 meters.
Chimney on small house.....	258	48	..	2 miles.
Left point of peak of roof of Dowell's.....	287	30	..	$2\frac{1}{4}$ miles.
Left end of peak of roof of Trent Hall Wharf...	315	35	..	$1\frac{1}{2}$ miles.
Middle cupola on stable.....	321	12	20	$1\frac{1}{2}$ miles.
Right pillar on Sothoron house porch.....	359	21	..	1 mile.

SOTHORON.

General locality.—Western shore of Patuxent River on Long Point between entrances to Indian and Trent Hall creeks. (See Chart No. 26.)

Immediate locality.—Observed station is on sand and grass lowland about 1 foot above high-water mark among cedar trees, about 24 yards west by north of extreme end of point, 12 yards north of one edge of shore and 30 yards southwest of another edge of shore.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hallowing" (N $13^{\circ} 51'$ E).....	0	00	00	$1\frac{1}{4}$ miles.
Nearest chimney on Gourley house.....	3	55	..	$1\frac{1}{4}$ miles.
Nail in blaze in locust tree (4 inches diameter)...	30	49	..	3.35 meters.
Left end of peak of roof of Dowell house.....	120	35	..	$2\frac{1}{4}$ miles.
Middle cupola on Trent Hall stable.....	150	25	00	$1\frac{1}{4}$ miles.
Point of middle attic window on John Bullinger house.....	187	42	..	1 mile.
Left pillar of porch of Sothoron house.....	206	23	..	$\frac{1}{2}$ mile.
Nail in blaze in cedar tree (12 inches diameter). 242	51	50	..	8.12 meters.
Near corner of nearest chimney on Slye house.. 291	05	20	..	2 miles.
Nail in blaze in locust tree (4 inches diameter)...	302	29	40	10.83 meters.
Right one of two outside chimneys on old house on hill on property of A. B. Slye.....	307	31	..	2 miles.
Center of roof on square house.....	323	39	..	1 mile.
Nail in blaze in locust tree (6 inches diameter)...	350	24	10	12.81 meters.

BUZZ.

General locality.—Northeast shore of Patuxent River on southwest side of Buzzards Island, near mouth of Buzzards Island Creek. (See Chart No. 26.)

Immediate locality.—Observed station is on marsh, clay, and grass land on wooded island about 2 feet above high water, 5 yards northeast of river shore and 40 yards northwest of extreme point of island. Cement monument marking reference station is 8.97 meters N $42^{\circ} 23'$ E of observed station.

Marks.—Observed station is nail in stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Morsel" (S $25^{\circ} 23'$ E)	0	00	00	3/4 mile.
Smokepipe on roof of storehouse	39	11	..	2 miles.
Near corner of near chimney	40	36	..	2 miles.
Chimney of Trent Hall	50	48	..	1 1/4 miles.
Nearest of three cupolas on stable	54	36	50	1 1/4 miles.
Left piazza post at Sothorons	102	41	..	1 1/4 miles.
Center of roof of square house	155	15	..	1 3/4 miles.
"Catholic Church Cross"	164	56	..	2 miles.
Nail in blaze in oak tree (18 inches diameter) . .	172	14	..	4.55 meters.
Nail in blaze in oak tree (18 inches diameter) . .	198	36	40	13.16 meters.
Nail in blaze in oak tree (24 inches diameter) . .	235	08	30	9.62 meters.
REFERENCE STATION	252	45	45	8.97 meters.
Nail in blaze in pine tree (5 inches diameter) . .	255	43	..	6.52 meters.
Chimney on house across creek	313	23	..	1/4 mile.

BOUNDARIES OF OYSTER BARS.

EXPLANATION.

The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the designation and employment by the Department of Commerce and Labor of such officers, experts, and other technically qualified persons "as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland." The oyster laws of Maryland provide that the Maryland Shell Fish Commissioners, with the aid of such persons as may be designated by the Government, shall proceed "to have laid out, surveyed, and designated on the said charts the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts." The oyster laws of Maryland also provide in another section that there shall "be made a true and accurate survey of the natural oyster beds, bars, and rocks * * * with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey."

Under the provisions of the laws quoted above the State of Maryland, in cooperation with the Department of Commerce and Labor, must define the boundaries of the natural oyster bars "as accurately as practicable" and also "with reference to fixed and permanent objects on the shore, giving courses and distances." The requirement of "as accurately as practicable" is easily fulfilled by definition of the location of the corners of the oyster bars by latitude and longitude. In fact, this method is probably the most satisfactory and accurate one that could be used for all purposes of legal definition or for relocation of the oyster-bar boundaries by competent engineers. Therefore the additional requirement of "giving courses and distances" is superfluous and is only fulfilled in the published definitions on account of the specific provisions of the law making it compulsory. This part of the description of boundaries has involved an immense amount of extra computations in order to prevent technical discrepancies between the latitude and longitude of a corner of an oyster bar and its distance and bearing from objects on shore of known latitude and longitude without adding anything to the accuracy and very little to the convenience of practical use of the descriptions of the oyster-bar boundaries.

As provided by law the boundaries of the oyster bars are all straight lines, but in the work already completed they have inclosed areas of all shapes from triangles to complicated 14-sided figures, and of all sizes from 4 acres to 7,548 acres. The sides have varied in length from 93 to 7,529 yards, and in some cases the corners of the boundaries have been practically at the triangulation stations from which they are located, while in other instances they were over 13,600 yards from the landmarks most available for the purpose of fixing their position.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made and the magnitude of the work with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and great importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the Commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and the future.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in each county.

Title.—At the top of each tabular form is given the legal name of the oyster bar to be described, and the one by which it is known and designated in the published oyster records and on the oyster charts. The adopted name of the oyster bar is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission; and when there was no local name in common use a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the oyster bar was located.

Underneath the name, in parentheses, is given the general locality of the oyster bar and the serial number of the "Maryland Oyster Chart" on which its legal boundaries are shown.^a

First column.—This column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoys marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar. Where a corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars, only the number of the corner of the oyster bar being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definition of the location of the corners, and should be considered as final in case of a dispute arising from discrep-

^a These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

ancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"^a and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"^b gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars: one, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

(1) *Triangulation.*—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation

^a The mean magnetic variation for Charles County was $5^{\circ} 20'$ west of north in 1910 and increasing at the rate of $4'$ yearly.

^b Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant, the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "Stoddard" oyster bar, which is the first one described in this publication, and assume that "Corner No. 3," is to be examined as to its position. The angle between the two landmarks "Key" and "Upper" as determined from right to left from the forward bearings from this corner is $122^{\circ} 28'$ and the angle between "Upper" and "Stoddard" is $88^{\circ} 43'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the

angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant then the other until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic location of a point is attained. In fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the Commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State fishery force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer can take compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,^a and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks, for which the bearings are published, have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used. This can be done by getting their bearings directly from the chart by parallel rulers or a protractor and then applying these new bearings in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fifth column of the tables opposite the "corner" in question. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

^a The mean magnetic variation for Charles County is 5° 20' west of north in 1910 and increasing at the rate of 4' yearly.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

STODDARD.

(Upper Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / //	° / //	° /	° /	Yards.	
1	38 21 30.76	76 50 51.20	N 55 14 E	S 55 15 W	1,199	Key.
			N 87 09 W	S 87 10 E	856	Stoddard.
			S 52 52 W	N 52 52 E	1,354	Hayden.
2	38 21 31.00	76 51 14.34	N 37 05 W	S 37 05 E	1,102	Upper.
			N 81 54 W	S 81 54 E	244	Stoddard.
			S 29 24 W	N 29 23 E	947	Hayden.
3	38 21 38.90	76 51 14.82	N 75 46 E	S 75 46 W	1,663	Key.
			N 46 42 W	S 46 42 E	896	Upper.
			S 44 35 W	N 44 35 E	326	Stoddard.
4	38 21 38.74	76 50 51.60	N 67 24 E	S 67 24 W	1,078	Key.
			N 64 01 W	S 64 01 E	1,411	Upper.
			S 74 59 W	N 74 59 E	875	Stoddard.

WICOMICO LUMPS.

(Upper Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 20 17.64	76 51 40.36	S 85 05 E N 15 14 W S 54 28 W	N 85 05 W S 15 14 E N 54 27 E	1,834 775 973	Fact. Burr. Bowman.
2	38 20 33.54	76 51 45.42	N 17 57 E N 18 07 W S 30 50 W	S 17 57 W S 18 07 E N 30 50 E	1,168 223 1,284	Hayden. Burr. Bowman.
3	38 21 10.18	76 50 51.08	S 84 22 E N 49 23 W S 83 30 W	N 84 22 W S 49 24 E N 83 20 E	897 1,131 1,090	Cohouck. Stoddard. Hayden.
Thence along county boundary as delineated on Chart No. 26 to corner No. 4.						
4	38 20 51.98	76 50 58.86	N 64 26 E N 60 46 W S 72 34 W	S 64 26 W S 60 46 E N 72 34 E	1,218 1,004 1,368	Cohouck. Hayden. Burr.
Thence along county boundary as delineated on Chart No. 26 to corner No. 5.						
5	38 20 20.70	76 51 13.00	N 55 17 W S 66 14 W S 76 42 E	S 55 17 E N 66 13 E N 76 42 W	1,132 1,660 1,132	Burr. Bowman. Fact.

MILLS WEST.

(Upper Wicomico River—Chart No. 26.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 19 50.98	76 51 45.74	N 2 07 W N 62 50 W S 26 44 E	S 2 07 E S 62 50 E N 26 43 W	1,648 729 1,156	Burr. Bowman. Eedling.
2	38 20 17.64	76 51 40.36	S 85 05 E N 15 14 W S 54 28 W	N 85 04 W S 15 14 E N 54 27 E	1,834 775 973	Fact. Burr. Bowman.
3	38 20 20.70	76 51 13.00	N 55 17 W S 66 14 W S 76 42 E	S 55 17 E N 66 13 E N 76 42 W	1,132 1,660 1,132	Burr. Bowman. Fact.
Thence along county boundary as delineated on Chart No. 26 to corner No. 4.						
4	38 20 00.00	76 51 11.88	N 88 54 W S 15 50 W N 67 44 E	S 88 55 E N 15 50 E S 67 44 W	1,548 1,392 1,157	Bowman. Eedling. Fact.

Survey of Oyster Bars, Charles County, Md.

JOES LUMPS.

(Middle Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 19 04.42	76 50 28.14	N 78 10 E N 2 14 W S 77 22 W	S 78 11 W S 2 14 E N 77 22 E	961 2,313 1,049	Farr. Fact. Gust.
2	38 19 04.52	76 51 04.74	S 12 18 W N 84 14 E N 46 57 W	N 12 18 E S 84 15 W S 46 57 E	233 1,923 779	Gust. Farr. Eedling.
3	38 19 11.00	76 51 12.82	S 19 58 E S 89 18 E N 48 33 W	N 19 58 W N 89 17 W S 48 33 E	480 2,128 474	Gust. Farr. Eedling.
4	38 19 22.46	76 51 17.14	N 47 25 W S 73 02 W S 18 27 E	S 47 26 E N 73 02 E N 18 27 W	1,913 250 879	Bowman. Eedling. Gust.
5	38 19 50.98	76 51 45.74	N 2 07 W N 62 50 W S 26 44 E	S 2 07 E S 62 50 E N 26 43 W	1,648 729 1,156	Burr. Bowman. Eedling.
6	38 20 00.00	76 51 11.88	N 88 54 W S 15 50 W N 67 44 E	S 88 55 E N 15 50 E S 67 44 W	1,548 1,392 1,157	Bowman. Eedling. Fact.
Thence along county boundary as delineated on Chart No. 26 to corner No. 1.						

WINDMILL.

(Middle Wicomico River—Chart No. 26.)

	° / ' "	° / ' "	° / ' "		Yards.	
			° / ' "	° / ' "		
1	38 18 13.28	76 50 55.00	S 20 55 E S 87 33 E N 11 43 W	N 20 55 W N 87 32 W S 11 43 E	502 2,227 1,523	Hedney. Lyon. Gust.
2	38 18 35.66	76 50 54.30	S 7 28 E S 68 56 E N 23 54 W	N 7 28 W N 68 55 W S 23 54 E	1,237 2,359 809	Hedney. Lyon. Gust.
3	38 18 45.28	76 51 04.61	S 15 43 E S 64 37 E N 7 25 W	N 15 43 W N 64 36 W S 7 25 E	1,604 2,745 421	Hedney. Lyon. Gust.
4	38 18 53.20	76 50 57.30	S 7 32 E N 71 28 E N 59 02 W	N 7 32 W S 71 29 W S 59 02 E	1,834 1,809 289	Hedney. Farr. Gust.
5	38 19 04.52	76 51 04.74	S 12 18 W N 84 14 E N 46 57 W	N 12 18 E S 84 15 W S 46 57 E	233 1,923 779	Gust. Farr. Eedling.
6	38 19 04.42	76 50 28.14	N 78 10 E N 2 14 W S 77 22 W	S 78 11 W S 2 14 E N 77 22 E	961 2,313 1,049	Farr. Fact. Gust.
Thence along the county boundary as delineated on Chart No. 26 to corner No. 7.						
7	38 18 24.45	76 50 16.82	S 44 40 W S 68 42 E N 22 31 E	N 44 39 E N 68 42 W S 22 31 W	1,189 1,299 1,672	Hedney. Lyon. Farr.

Survey of Oyster Bars, Charles County, Md.

49

FENWICK.

(Middle Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 17 55.86	76 50 36.14	N 69 46 W S 14 00 E N 74 04 E	S 69 46 E N 14 00 W S 74 04 W	343 1,227 1,792	Hedney. Charles. Lyon.
2	38 18 13.28	76 50 55.00	S 20 55 E S 87 33 E N 11 43 W	N 20 55 W N 87 32 W S 11 43 E	502 2,227 1,523	Hedney. Lyon. Gust.
3	38 18 24.45	76 50 16.82	S 44 40 W S 68 42 E N 22 31 E	N 44 39 E N 68 42 W S 22 31 W	1,189 1,299 1,672	Hedney. Lyon. Farr.
Thence along the county boundary as delineated on Chart No. 26 to corner No. 4.						
4	38 17 55.98	76 50 08.16	N 63 31 E N 83 52 W S 20 30 W	S 63 32 W S 83 52 E N 20 30 E	1,095 1,072 1,275	Lyon. Hedney. Charles.

WICOMICO MIDDLE GROUND.

(Middle Wicomico River—Chart No. 26.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 17 26.40	76 49 42.82	S 68 36 E N 11 40 E S 80 01 W	N 68 35 W S 11 40 W N 80 00 E	1,357 1,520 1,137	Weiss. Lyon. Charles.
2	38 17 31.78	76 50 25.60	S 2 32 E N 47 54 E N 32 54 W	N 2 32 W S 47 55 W S 32 54 E	379 1,945 1,108	Charles. Lyon. Hedney.
3	38 17 55.86	76 50 36.14	N 69 46 W S 14 00 E N 74 04 E	S 69 46 E N 14 00 W S 74 04 W	343 1,227 1,792	Hedney. Charles. Lyon.
4	38 17 55.98	76 50 08.16	N 63 31 E N 83 52 W S 20 30 W	S 63 32 W S 83 52 E N 20 30 E	1,095 1,072 1,275	Lyon. Hedney. Charles.
Thence along county boundary as delineated on Chart No. 26 to corner No. 1.						

Survey of Oyster Bars, Charles County, Md.

CHARLESTON CREEK.

(Middle Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 16 45.98	76 50 04.48	S 3 51 E	N 3 51 W	697	Hard.
			N 64 45 E	S 64 45 W	2,033	Weiss.
			N 25 02 W	S 25 03 E	1,286	Charles.
2	38 17 10.08	76 50 04.50	S 1 48 E	N 1 48 W	1,508	Hard.
			N 88 17 E	S 88 18 W	1,841	Weiss.
			N 57 01 W	S 57 01 E	649	Charles.
3	38 17 26.40	76 49 42.82	S 68 36 E	N 68 35 W	1,357	Weiss.
			N 11 40 E	S 11 40 W	1,520	Lyon.
			S 80 01 W	N 80 00 E	1,137	Charles.
Thence along county boundary as delineated on Chart No. 26 to corner No. 4.						
4	38 16 55.66	76 49 32.82	N 61 31 E	S 61 32 W	1,133	Weiss.
			N 58 48 W	S 58 49 E	1,621	Charles.
			S 37 53 W	N 37 53 E	1,294	Hard.

LANCASTER.

(Lower Wicomico River—Chart No. 26.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 16 26.20	76 49 48.82	S 73 19 E	N 73 18 W	2,146	Prec.
			N 42 50 E	S 42 51 W	2,093	Weiss.
			S 85 37 W	N 85 37 E	371	Hard.
2	38 16 30.22	76 50 04.42	S 15 25 E	N 15 25 W	170	Hard.
			N 52 43 E	S 52 44 W	2,310	Weiss.
			N 17 50 W	S 17 51 E	1,783	Charles.
3	38 16 45.98	76 50 04.48	S 3 51 E	N 3 51 W	697	Hard.
			N 64 45 E	S 64 45 W	2,033	Weiss.
			N 25 02 W	S 25 03 E	1,286	Charles.
4	38 16 55.66	76 49 32.82	N 61 31 E	S 61 32 W	1,133	Weiss.
			N 58 48 W	S 58 49 E	1,621	Charles.
			S 37 53 W	N 37 53 E	1,294	Hard.
Thence along the county boundary as delineated in Chart No. 26 to corner No. 5.						
5	38 16 34.94	76 49 13.42	S 50 45 E	N 50 45 W	1,442	Prec.
			N 67 32 E	S 67 32 W	1,791	Blakistone.
			N 21 15 E	S 21 15 W	1,330	Weiss.

Survey of Oyster Bars, Charles County, Md.

51

ROCK POINT.

(Lower Wicomico River—Chart No. 26.)

Corner of bar-	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 15 53.62	76 49 54.98	N 77 43 E	S 77 43 W	2,271	Prec.
			N 10 53 W	S 10 53 E	1,090	Hard.
			S 47 24 W	N 47 24 E	944	Corner.
2	38 15 53.70	76 50 09.30	S 26 08 W	N 26 08 E	717	Corner.
			N 79 31 E	S 79 32 W	2,644	Prec.
			N 9 18 E	S 9 18 W	1,082	Hard.
3	38 15 56.62	76 50 23.06	S 3 53 E	N 3 53 W	744	Corner.
			N 82 39 E	S 82 40 W	2,991	Prec.
			N 29 10 E	S 29 10 W	1,110	Hard.
4	38 15 56.19	76 50 26.80	S 11 40 E	N 11 40 W	743	Corner.
			N 82 38 E	S 82 39 W	3,091	Prec.
			N 33 03 E	S 33 04 W	1,173	Hard.
5	38 15 58.92	76 50 26.82	S 10 24 E	N 10 24 W	834	Corner.
			N 84 20 E	S 84 22 W	3,081	Prec.
			N 35 42 E	S 35 42 W	1,098	Hard.
6	38 16 00.00	76 50 18.76	S 4 17 W	N 4 17 E	857	Corner.
			N 84 39 E	S 84 40 W	2,864	Prec.
			N 26 30 E	S 26 30 W	956	Hard.
7	38 16 20.60	76 50 01.98	S 18 13 W	N 18 13 E	1,632	Corner.
			S 79 54 E	N 79 53 W	2,443	Prec.
			N 6 59 W	S 6 59 E	162	Hard.
8	38 16 26.20	76 49 48.82	S 73 10 E	N 73 18 W	2,146	Prec.
			N 42 50 E	S 42 51 W	2,093	Weiss.
			S 85 37 W	N 85 37 E	371	Hard.
9	38 16 34.94	76 49 13.42	S 50 45 E	N 50 45 W	1,442	Prec.
			N 67 32 E	S 67 32 W	1,791	Blakistone.
			N 21 15 E	S 21 15 W	1,330	Weiss.
10	38 16 01.56	76 49 33.97	N 82 38 E	S 82 39 W	1,675	Prec.
			N 43 36 W	S 43 36 E	1,108	Hard.
			S 54 07 W	N 54 07 E	1,550	Corner.

Survey of Oyster Bars, Charles County, Md.

SHIPPING POINT.

(Lower Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 15 26.96	76 49 47.60	N 73 48 W S 8 55 E S 65 57 E	S 73 49 E N 8 55 W N 65 57 W	930 1,830 1,858	Corner. Cobb Point Bar Light. St. Margaret 2.
2	38 15 28.40	76 50 12.00	S 26 40 E S 71 03 E N 49 15 W	N 26 40 W N 71 02 W S 49 15 E	2,078 2,480 322	Cobb Point Bar Light. St. Margaret 2. Corner.
3	38 15 42.76	76 49 57.94	N 5 03 W S 66 04 W S 13 25 E	S 5 03 E N 66 04 E N 13 25 W	1,441 676 2,406	Hard. Corner. Cobb Point Bar Light.
4	38 15 53.70	76 50 09.30	S 26 08 W N 79 31 E N 9 18 E	N 26 08 E S 79 32 W S 9 18 W	717 2,644 1,082	Corner. Prec. Hard.
5	38 15 53.62	76 49 54.98	N 77 43 E N 10 53 W S 47 24 W	S 77 43 W S 10 53 E N 47 24 E	2,271 1,090 944	Prec. Hard. Corner.
6	38 15 45.40	76 49 40.46	N 67 30 E N 23 43 W S 71 27 W	S 67 31 W S 23 43 E N 71 27 E	1,985 1,471 1,142	Prec. Hard. Corner.

COBB POINT.

(Lower Wicomico River—Chart No. 26.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 14 32.61	76 49 24.30	N 45 04 E N 35 52 W N 85 52 W	S 45 05 W S 35 53 E S 85 52 E	1,522 2,580 337	St. Margaret 2. Corner. Cobb Point Bar Light.
2	38 14 33.33	76 49 36.93	S 81 09 E N 53 22 E N 29 39 W	N 81 08 W S 53 23 W S 29 39 E	3,285 1,762 2,379	St. Catherine. St. Margaret 2. Corner.
3	38 14 38.79	76 49 53.05	S 66 46 E N 64 48 E N 21 39 W	N 66 45 W S 64 49 W S 21 40 E	467 2,035 2,030	Cobb Point Bar Light. St. Margaret 2. Corner.
4	38 15 00.00	76 50 16.60	S 49 33 E N 86 28 E N 5 53 W	N 49 33 W S 86 29 W S 5 53 E	1,386 2,473 1,173	Cobb Point Bar Light. St. Margaret 2. Corner.
5	38 15 00.00	76 49 47.48	S 17 22 E N 84 53 E N 37 30 W	N 17 22 W S 84 54 W S 37 30 E	940 1,701 1,471	Cobb Point Bar Light. St. Margaret 2. Corner.

TEAGUE.

(Upper Patuxent River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / '	° / '	° / '	° / '	Yards.	
1	38 31 26.32	76 40 15.01	N 74 28 E	S 74 29 W	1,750	Buena.
			N 40 12 W	S 40 12 E	408	Teague.
			S 13 24 W	N 13 24 E	1,222	City.
2	38 31 47.57	76 40 25.32	S 1 23 E	N 1 23 W	405	Teague.
			S 82 47 E	N 82 46 W	1,974	Buena.
			N 23 49 E	S 23 49 W	1,208	Leitch.
3	38 31 41.00	76 40 05.60	S 88 56 E	N 88 56 W	1,436	Buena.
			N 1 28 W	S 1 28 E	1,328	Leitch.
			S 70 21 W	N 70 21 E	545	Teague.
4	38 31 31.00	76 40 00.50	N 76 34 E	S 76 35 W	1,337	Buena.
			N 5 48 W	S 5 48 E	1,673	Leitch.
			N 76 37 W	S 76 38 E	660	Teague.

ELBOW.

(Upper Patuxent River—Chart No. 26.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 31 11.40	76 40 07.18	N 30 01 W	S 30 02 E	942	Teague.
			S 35 30 W	N 35 30 E	844	City.
			S 12 36 E	N 12 36 W	1,346	Hallowing.
2	38 31 21.38	76 40 07.64	N 66 55 E	S 66 56 W	1,620	Buena.
			N 43 48 W	S 43 48 E	663	Teague.
			S 25 02 W	N 25 02 E	1,131	City.
3	38 31 23.96	76 39 59.32	N 66 36 E	S 66 37 W	1,383	Buena.
			N 60 02 W	S 60 03 E	784	Teague.
			S 32 10 W	N 32 10 E	1,312	City.
4	38 31 15.42	76 39 58.63	N 56 15 E	S 56 16 W	1,505	Buena.
			N 45 45 W	S 45 45 E	973	Teague.
			S 41 07 W	N 41 07 E	1,090	City.

Survey of Oyster Bars, Charles County, Md.

CARPENTERS YARD.

(Upper Patuxent River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 30 14.21	76 40 28.32	S 59 32 E N 54 22 E N 54 57 W	N 59 32 W S 54 23 W S 54 57 E	1,260 1,051 494	Dwarf. Hallowing. Indian.
2	38 30 14.56	76 40 37.12	S 63 45 E N 61 02 E N 32 13 W	N 63 44 W S 61 03 W S 32 13 E	1,471 1,240 322	Dwarf. Hallowing. Indian.
3	38 30 24.62	76 40 38.64	N 76 57 E N 21 05 E S 62 54 W	S 76 58 W S 21 05 W N 62 54 E	1,158 954 148	Hallowing. City. Indian.
4	38 30 39.94	76 40 25.60	S 71 56 E N 0 24 W S 39 18 W	N 71 56 W S 0 24 E N 39 18 E	822 373 752	Hallowing. City. Indian.
5	38 30 29.62	76 40 20.02	N 81 39 E N 11 47 W S 69 19 W	S 81 40 W S 11 48 E N 69 19 E	641 736 667	Hallowing. City. Indian.
6	38 30 24.08	76 40 27.79	N 71 36 E N 3 29 E S 83 20 W	S 71 37 W S 3 29 W N 83 20 E	886 910 421	Hallowing. City. Indian.

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

Survey of Oyster Bars, Charles County, Md.

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved March 4, 1909.]

AN ACT Making appropriation for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and ten, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and ten, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved June 25, 1910.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eleven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and eleven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available fifteen thousand dollars.

[Act of the Legislature of Maryland approved April 2, 1906.]

AN ACT To establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That the following sections be, and they are hereby, added to article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis, and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie. * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section.

* * * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the said to the Clerks of the Circuit court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks shall be construed in all the courts of the State to be barren bottoms and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act; provided, that the said survey and report shall not be construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act.

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the survey, is as follows:

AN ACT Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or leveling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.^a *And be it enacted*, That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses (to be by them sworn or affirmed and examined), shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

^a Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from Second Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland, had a twofold object in view:

1. To encourage an industry in oyster culture upon the *barren bottoms* beneath the tidewaters of the State.
2. To prevent the leasing of *natural oyster bars* for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

DEFINITION OF A NATURAL OYSTER BAR.

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoying them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the Commission."

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturists, may be made to yield a greater number of oysters than they now produce."

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

The definition of a natural oyster bar which very nearly approaches a reasonable and satisfactory compromise between the views of the subject held by *oystermen* on one hand and by *oyster culturists* on the other is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Todd *v.* Job T. Moore.

This definition has been adopted by the Shell Fish Commission as the basis for the determination of the status of the various oyster bottoms surveyed and is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them, and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the Act of Assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the Act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and can not be located or appropriated by any individual.

APPLICATION OF DEFINITION.

Before this definition may be of use in determining, accurately and scientifically, the status of an oyster ground, its central idea, "livelihood," must be expanded into accurately determinable factors, and these factors must be combined into a practical scheme of investigating the condition of the ground under consideration.

Stated briefly, a *livelihood* is represented by a *sum of money* obtained from the sale, at a fixed *price*, of a certain *quantity of oysters* gathered in a given *time* from an allotted *area* of ground.

Knowing the value of each of these factors it becomes possible to calculate the number of oysters an oyster ground must produce per square yard in order that oystermen may secure a livelihood by working upon it.

NOTE.—The factors into which the Commission resolved the livelihood problem, the value assigned to each factor, and the scheme devised for practical use in examining and applying the definition to oyster bottoms are given in outline in their second report under the heading of the preceding extract, and in detail in their first report on pages 32 to 69.

APPENDIX C.—SUMMARY OF THE PARTICULAR SURVEYING OPERATIONS WHICH CONSTITUTE AN "OYSTER SURVEY" AS NOW BEING CARRIED ON IN MARYLAND.

Explanation.—A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest practical accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Triangulation survey.—Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a framework or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

Topographic survey.—The technical records which establish the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the leasable bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

Hydrographic survey.—In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Necessary foundation for an oyster survey.—Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Special surveys and investigations pertaining to oysters.—Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations^a making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding boat party in addition to the usual hydrographic work.^b This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

The special oyster investigations^c consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

Preparation of results.—The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.^d This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for publication by the Government, the preparation of that part of the annual report of the Commission covering the special oyster surveys and investigations, the making of the leasing charts and finished projections, and finally the filing of the oyster charts and records with the courts and the Commission, thus opening a county for oyster culture.

Summary.—From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

^a See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

^b See pages 104 to 123 of "First Annual Report of Maryland Shell Fish Commission."

^c See pages 30 to 67 and 129 to 199 of "First Annual Report of Maryland Shell Fish Commission."

^d No mention is made here of the large amount of administrative work of the Commission, which is greatly complicated and increased by the effect of the oyster-survey operations on many thousands of people whose interests are more or less involved; or of the large amount of survey work involved in the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

Survey of Oyster Bars, Charles County, Md.

APPENDIX D.—STATISTICS OF RESULTS OF THE COMBINED OYSTER SURVEY OPERATIONS OF THE GOVERNMENT AND STATE.^a

Operations.	Anne Arundel County.	Somerset County.	Wicomico County.	Worcester County.	Calvert County.	Charles County.	Total. ^b
Beginning of field work.	June 20, 1906	May 2, 1907	Aug. 27, 1907	Nov. 8, 1907	May 2, 1908	Aug. 18, 1908	.....
Filing of certified charts and reports.	June 20, 1907	July 1, 1908	Dec. 1, 1908	Apr. 12, 1909	Dec. 14, 1909	Jan. 27, 1911	.....
Natural oyster bars surveyed and delineated.	91	37	15	28	41	15	227
Acres of natural oyster bars.	33,666	27,506	2,038	1,655	12,303	2,285	679,513
Crab bottoms surveyed and delineated.	.....	54	.....	.....	.....	.....	54
Acres of crab bottoms.	.....	32,108	.....	.....	.....	.....	32,108
Clam beds surveyed and delineated.	.....	3	.....	.....	.....	.....	3
Acres of clam beds.	.....	506	.....	.....	.....	.....	500
Boundary buoys located and planted.	.....	154	.....	.....	.....	.....	877
Triangulation landmarks established.	362	86	53	108	140	51	877
Miles of shore line covered by triangulation.	123	.....	30	48	78	42	305
Square miles of water covered by triangulation.	110	125	46	95	95	32	487
Miles of examination of shell bottom with chain apparatus.	220	375	44	110	157	20	902
Oyster investigation stations occupied.	369	296	58	63	250	38	1,074
Tide stations established.	440	679	162	147	667	113	2,208
Number of soundings over shell bottoms.	4	3	1	1	2	1	12
Square miles covered by soundings and chain apparatus.	37,049	17,904	3,387	3,649	11,292	1,631	74,912
Projections prepared and plotted.	58	47	3	3	30	4	135
Leasing charts prepared.	9	13	2	5	8	3	38
Oyster charts published.	13	12	2	3	5	2	37
Reports published.	4	6	2	3	5	1	21
Progress maps published.	2	2	2	2	2	2	8
	2	2	2	2	2	2	8

^a These statistics do not include the large amount of triangulation, topography, and hydrography resulting from previous work of the Coast and Geodetic Survey, which was utilized in the preparation of published oyster charts and records. Work in St. Marys, Baltimore, Kent, Queen Anne, and Dorchester counties has been finished, but final statistics of results will not be published until the summer of 1912.

^b Less quantities covered by statistics of more than one county.

^c Total area of natural oyster bars of Connecticut is 5,770 acres.

O

COAST AND GEODETIC SURVEY
 PROGRESS MAP
 CHARLES COUNTY
 MARYLAND

To accompany report of work of United States
 Coast and Geodetic Survey in cooperation
 with the Maryland Shell Fish Commission

1910

Projection L

CHART No. 19
 Catholic Church Creek

CHART No. 19

Projection R

CHART No. 26

Projection Q

A. A. No. 10, issued by Chart
 No. 1, 1871, and the Maryland
 No. 1, 1871, and the Maryland

- Landmarks Coast Survey Triangulation Stations
- Waters contiguous to county
- Waters within territorial limits of county
- Limits of projections on file at Washington
- Limits of charts published by Coast and Geodetic Survey

R I V E R

DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY
O. H. TITTMANN Superintendent

SURVEY OF OYSTER BARS

DORCHESTER COUNTY MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND
REPORT OF WORK OF UNITED STATES COAST
AND GEODETIC SURVEY IN COOPERATION
WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND
SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1912

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, August 17, 1912.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, together with certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the Shell Fish Commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, 1909, 1910, 1911, and 1912.

Respectfully,

O. H. TITTMANN, *Superintendent.*

To Hon. CHARLES NAGEL,
Secretary of Commerce and Labor.

CERTIFICATION.

BALTIMORE, MD., May 4, 1912.

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in Dorchester County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,

Chief of Coast and Geodetic Survey Party,

Assistant, Coast and Geodetic Survey.

BALTIMORE, MD., May 4, 1912.

Examined and certified to be correct.

WALTER J. MITCHELL,

CASWELL GRAVE,

BENJAMIN K. GREEN,

Maryland Shell Fish Commission.

SWEPSON EARLE,

Hydrographic Engineer.

NOTE.—Certified copies of this publication and of the charts of the natural oyster bars of Dorchester County were filed in the office of the clerk of the circuit court of Dorchester County and in the office of the Board of Shell Fish Commissioners on August 17, 1912.

CONTENTS.

	Page-
PROGRESS MAP	follows 180
LETTER OF SUBMITTAL	3
CERTIFICATION	5
INTRODUCTION:	
Publications	17
Cooperation of the Coast and Geodetic Survey	18
Cooperation of the Bureau of Fisheries	18
General statement of work of Coast and Geodetic Survey	18
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions	21
Organization and equipment	21
Chronological statement of work	22
Statistics	23
General remarks	24
CHARTS AND MAPS:	
Charts of natural oyster bars	25
Leasing charts	26
Projections	27
Progress maps	27
BOUNDARIES OF THE COUNTY WATERS:	
Waters within territorial limits of county	28
Waters contiguous to county	30
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation	31
Method of describing triangulation stations	31
Descriptions of triangulation stations in county and adjacent waters—	
<i>Chart No. 35 (Upper Choptank River)—</i>	
Weather Bureau staff	34
First	34
Bach	34
Boone	35
Enter	35
Landeye	35
Choptank River Light (<i>see also</i> Chart No. 37)	36
Benoni 2 (<i>see</i> Progress map)	36
Chlora	36
Trappe	37
Grubin	37
Black Beacon	38
Howells	38
Red	38
Double	39
Boling	39
Rear	40
Chancellor	40

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 35 (Upper Choptank River)—Continued.

	Page.
Barber.....	41
Duck (Choptank River).....	41
Jam.....	42
Spindle.....	42
Bank.....	42
Raccoon.....	43
Blind.....	43
Up.....	44
Myrtle.....	44
Hut.....	44
House.....	45
Saw.....	45
Wick.....	45
War.....	46
Gander.....	47
Chief.....	47
Shell.....	48
Whitehall.....	48
Ferry.....	48
Shoal.....	49
E. Cambridge Tall Stack.....	49
E. Cambridge Spire.....	50
Cambridge Stand Pipe.....	50
Cambridge.....	50
Hambrooks Bar Beacon.....	50
Dicks Water Tank.....	50
Command.....	51
Howard.....	51
Toot.....	52
Le Compte.....	52
Large Water Tank.....	52
Castle.....	53

Chart No. 36 (Chesapeake Bay, vicinity of Little Choptank River)—

Jere.....	53
Sharps Island Light.....	53
Black.....	53
Bar (<i>see</i> Progress map).....	54
Change 1910 (<i>see</i> Progress map).....	54
Chef (<i>see also</i> Chart No. 37).....	55
Cook Point Windmill (<i>see also</i> Chart No. 37).....	55
Brannock (<i>see also</i> Chart No. 37).....	56
Robins (<i>see also</i> Chart Nos. 37 and 38).....	56
Ragged Point 3 (<i>see also</i> Chart No. 37).....	57
Torrey (<i>see also</i> Charts Nos. 37 and 38).....	57
Maryland (<i>see also</i> Charts Nos. 37 and 38).....	58
Whitewash (<i>see also</i> Charts Nos. 37 and 38).....	58
Moore (<i>see also</i> Charts Nos. 37 and 38).....	59
Veith (<i>see also</i> Charts Nos. 37 and 38).....	59
Can (<i>see also</i> Charts Nos. 37 and 38).....	59
Skid (<i>see also</i> Charts Nos. 37 and 38).....	60
Rede (<i>see also</i> Chart. No. 37).....	60
James (<i>see also</i> Chart No. 37).....	61

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.
 Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 37 (Little Choptank River and tributaries)—

	Page
Choptank River Light (<i>see also</i> Chart No. 35)	36
Nelson 3 (<i>see</i> Progress map)	61
Annette (<i>see</i> Progress map)	62
Peary (<i>see</i> Progress map)	62
Irish (<i>see</i> Progress map)	62
Roys (<i>see</i> Progress map)	63
Creek (<i>see</i> Progress map)	63
Corner (Choptank River)	64
Dot	64
Chef (<i>see also</i> Chart No. 36)	55
Cook Point Windmill (<i>see also</i> Chart No. 36)	55
Brannock (<i>see also</i> Chart No. 36)	56
Robins (<i>see also</i> Chart No. 36)	56
Ragged Point 3 (<i>see also</i> Chart No. 36)	57
Hudson	65
Jenifer	65
Henry	66
Mitchell	66
Back	66
Bayly	67
Carrie	67
Louise	68
Greenwell	68
Ross	68
Phil	69
Dupont	69
Beckwith	70
Cherry Island Water Tank	70
Lec	70
Solomon	70
Seth	71
Adam	71
Layton	72
David	72
Town	72
Sweep	73
Hugh	73
Etta	74
Mary	74
Neil	74
Kirby	75
Paul (Little Choptank River) (<i>see</i> Progress map)	75
Church Creek (No. 1 West)	76
Austin	76
Tom	76
Brooks	77
Doctor	77
Eleanor	78
Laney	78
Mac	78
Madison Southern M. E. Church Spire	79
Tobacco Stick	79

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

<i>Chart No. 37 (Little Choptank River and tributaries)—Continued.</i>		Page.
Wool.....		80
Pov (<i>see also</i> Chart No. 38).....		80
Torrey (<i>see also</i> Charts Nos. 36 and 38).....		57
Maryland (<i>see also</i> Charts Nos. 36 and 38).....		58
Whitewash (<i>see also</i> Charts Nos. 36 and 38).....		58
Moore (<i>see also</i> Charts Nos. 36 and 38).....		59
Veith (<i>see also</i> Charts Nos. 36 and 38).....		59
Can (<i>see also</i> Charts Charts Nos. 36 and 38).....		59
Skid (<i>see also</i> Charts Nos. 36 and 38).....		60
Rede (<i>see also</i> Chart No. 36).....		60
James (<i>see also</i> Chart No. 36).....		61
<i>Chart No. 38 (Chesapeake Bay, between James Island and Barren Island)—</i>		
Pov (<i>see also</i> Chart No. 37).....		80
Torrey (<i>see also</i> Charts Nos. 36 and 37).....		57
Maryland (<i>see also</i> Charts Nos. 36 and 37).....		58
Noblee.....		81
Finish.....		81
Taylor.....		82
Harrington.....		82
Whitewash (<i>see also</i> Charts Nos. 36 and 37).....		58
Moore (<i>see also</i> Charts Nos. 36 and 37).....		59
Veith (<i>see also</i> Charts Nos. 36 and 37).....		59
Can (<i>see also</i> Charts Nos. 36 and 37).....		59
Skid (<i>see also</i> Charts Nos. 36 and 37).....		60
Travers 2.....		83
Dunnock.....		83
Cove Point Light.....		84
Point of Rocks.....		84
<i>Chart No. 39 (Chesapeake Bay, vicinity of Barren Island)—</i>		
Cedar Point Light.....		84
Hooper Island Light.....		84
South.....		85
North.....		85
Mint.....		85
Keenes (<i>see also</i> Chart No. 40).....		86
Gunners (<i>see also</i> Chart No. 40).....		86
Hosier Memorial Church spire (<i>see also</i> Chart No. 40).....		87
Mount Zion M. E. Church spire (<i>see also</i> Chart No. 40).....		87
Bridge (<i>see also</i> Chart No. 40).....		87
<i>Chart No. 40 (Honga River)—</i>		
Aplegarth.....		87
Hopkins Memorial Church cupola.....		88
Hoopersville Methodist Church cupola.....		88
Bentley.....		88
Bridge (<i>see also</i> Chart No. 39).....		87
Mount Zion M. E. Church Spire (<i>see also</i> Chart No. 39).....		87
Hosier Memorial Church Spire (<i>see also</i> Chart No. 39).....		87
Gunners (<i>see also</i> Chart No. 39).....		86
Keenes (<i>see also</i> Chart No. 39).....		86
Kerwin.....		89
Wroten.....		89

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.
Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 40 (Honga River)—Continued.

	Page.
Charles.....	89
Lakes.....	90
Asquith.....	90
Windmill 2.....	91
Paul (Honga River).....	91
Toddsville M. E. Church Spire.....	91
Duck (Honga River).....	92
St. Thomas Church Spire.....	92
Norman.....	92
Hooper Strait Light.....	93

Chart No. 41 (Fishing Bay and Nanticoke River)—

Crab.....	93
Head.....	93
Croch.....	93
Roast.....	94
Farm.....	94
Thoro.....	95
High.....	95
Elliott.....	95
Ear.....	96
Fish.....	96
Frog.....	96
Cow.....	97
Okay.....	97
Ar.....	98
Gover (<i>see</i> Progress map).....	98
Streett (<i>see</i> Progress map).....	99
Earle (<i>see</i> Progress map).....	99
Juliet (<i>see</i> Progress map).....	99
Pole.....	100
Bivalve Church.....	100
Rag.....	100
Nanticoke Church.....	101
Roar.....	101
Nanti.....	101
White.....	102
Great Shoals Light (<i>see</i> Progress map).....	102
Room.....	102
Sharkfin Shoal Light.....	103
Haines.....	103
Deal Island Church.....	103

Chart No. 42 (Chesapeake Bay, vicinity of Holland Island)—

Solomons Lump Light (<i>see</i> Progress map).....	103
Holland Island Bar Light.....	104
Holland Island Church Spire.....	104
Okahanikan.....	104
Senator (<i>see</i> Progress map).....	104
Miles (<i>see</i> Progress map).....	105
Fog 2 (<i>see</i> Progress map).....	105
Point No Point Light (<i>see</i> Progress map).....	105
Point Lookout Light (<i>see</i> Progress map).....	105

BOUNDARIES OF OYSTER BARS:

Page.

Explanation.....	106
Method of describing boundaries.....	107
Surveying methods for relocation of boundaries.....	108
Boundaries of natural oyster bars in county ¹	111

Chart No. 35 (Upper Choptank River)—

Drum Point.....	111
Cabin Creek Entrance.....	111
Cabin Creek.....	112
Tanners Patch.....	112
Dixon.....	112
Oyster Shell Point.....	113
States Bank.....	113
Shoal Creek.....	113
Green Marsh.....	114
Hambrooks.....	114
Turtle Back.....	114
Sandy Hill Lumps.....	115
Sandy Hill.....	115
Commander.....	116
Horn Point.....	116
Le Compte.....	117
Castle Haven Creek.....	117
Castle Haven (<i>see also</i> Chart No. 37).....	118

Chart No. 36 (Chesapeake Bay, vicinity of Little Choptank River)—

Cook Point (<i>see also</i> Chart No. 37).....	118
Red Buoy (<i>see also</i> Chart No. 37).....	119
Spedden (<i>see also</i> Chart No. 37).....	119
Dupont (<i>see also</i> Chart No. 37).....	120
Diamond (<i>see also</i> Chart No. 37).....	120
Brannock (<i>see also</i> Chart No. 37).....	120
Mill Point (<i>see also</i> Chart No. 37).....	121
Hills Point (<i>see also</i> Chart No. 37).....	121
Hills Point North (<i>see also</i> Chart No. 37).....	121
Hills Point South (<i>see also</i> Chart No. 37).....	122
James Point.....	122
Travers (<i>see also</i> Chart No. 38).....	123
Marshall (<i>see also</i> Charts Nos. 37 and 38).....	123
Oyster Creek (<i>see also</i> Charts Nos. 37 and 38).....	124
Granger (<i>see also</i> Charts Nos. 37 and 38).....	124
Cators (<i>see also</i> Charts Nos. 37 and 38).....	124
Henpeck (<i>see also</i> Charts Nos. 37 and 38).....	125
Slaughter Creek (<i>see also</i> Charts Nos. 37 and 38).....	125
Hooper (<i>see also</i> Charts Nos. 37 and 38).....	125
Nine Acres (<i>see also</i> Chart No. 37).....	126
Little Choptank (<i>see also</i> Chart No. 37).....	126
Ragged Point (<i>see also</i> Chart No. 37).....	127
Peanut Hill (<i>see also</i> Chart No. 37).....	127
Ragged Point Flats (<i>see also</i> Chart No. 37).....	128
Cow Island (<i>see also</i> Chart No. 37).....	128
Bald Eagle (<i>see also</i> Chart No. 37).....	129

¹ See separate publications for boundaries of natural oyster bars in adjacent counties.

BOUNDARIES OF OYSTER BARS—Continued.

Page.

Boundaries of natural oyster bars in county—Continued.

Chart No. 37 (Little Choptank River and tributaries)—

Castle Haven (<i>see also</i> Chart No. 35)	118
Corners Wharf	129
Logans Hill	129
Todd Point	130
Cook Point (<i>see also</i> Chart No. 36)	118
Red Buoy (<i>see also</i> Chart No. 36)	119
Spedden (<i>see also</i> Chart No. 36)	119
Dupont (<i>see also</i> Chart No. 36)	120
Diamond (<i>see also</i> Chart No. 36)	120
Brannock (<i>see also</i> Chart No. 36)	120
Mill Point (<i>see also</i> Chart No. 36)	121
Hills Point (<i>see also</i> Chart No. 36)	121
Hills Point North (<i>see also</i> Chart No. 36)	121
Hills Point South (<i>see also</i> Chart No. 36)	122
Bald Eagle (<i>see also</i> Chart No. 36)	129
Cow Island (<i>see also</i> Chart No. 36)	128
Ragged Point Flats (<i>see also</i> Chart No. 36)	128
Peanut Hill (<i>see also</i> Chart No. 36)	127
Ragged Point (<i>see also</i> Chart No. 36)	127
Little Choptank (<i>see also</i> Chart No. 36)	126
Nine acres (<i>see also</i> Chart No. 36)	126
Hooper (<i>see also</i> Charts Nos. 36 and 38)	125
Slaughter Creek (<i>see also</i> Charts Nos. 36 and 38)	125
Henpeck (<i>see also</i> Charts Nos. 36 and 38)	125
Cators (<i>see also</i> Charts Nos. 36 and 38)	124
Granger (<i>see also</i> Charts Nos. 36 and 38)	124
Oyster Creek (<i>see also</i> Charts Nos. 36 and 38)	124
Marshall (<i>see also</i> Charts Nos. 36 and 38)	123
Along Shore (<i>see also</i> Chart No. 38)	131
Susquehanna	132
Little Pollard	132
Cason	132
Tobacco Stick	133
Butterpot	133
Hudson	133
Ross	134
McKeils Point	134
Town	135
Brumell	135
Cherry Island	136
Jones	136
Pattison	137
Barn Point	137
Saltwork	137
Fishing Creek	138
Grapevine	138

Chart No. 38 (Chesapeake Bay, between James Island and Barren Island)—

Along Shore (<i>see also</i> Chart No. 37)	131
Slaughter Creek (<i>see also</i> Charts Nos. 36 and 37)	125
Bridge	138
Hooper (<i>see also</i> Charts Nos. 36 and 37)	125

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

<i>Chart No. 38</i> (Chesapeake Bay, between James Island and Barren Island)—Continued.	Page.
Henpeck (<i>see also</i> Charts Nos. 36 and 37).....	125
Cators (<i>see also</i> Charts Nos. 36 and 37).....	124
Granger (<i>see also</i> Charts Nos. 36 and 37).....	124
Oyster Creek (<i>see also</i> Charts Nos. 36 and 37).....	124
Marshall (<i>see also</i> Charts Nos. 36 and 37).....	123
Travers (<i>see also</i> Chart No. 36).....	123
Punch Island Creek.....	139
<i>Chart No. 39</i> (Chesapeake Bay, vicinity of Barren Island)—	
Stone Pile.....	139
New Discovery.....	139
Horse Point Channel (<i>see also</i> Chart No. 40).....	140
Ware (<i>see also</i> Chart No. 40).....	140
White Wood.....	141
Tar Bay.....	141
Tubbmans Drain (<i>see also</i> Chart No. 40).....	142
Peanut (<i>see also</i> Chart No. 40).....	142
Gum (<i>see also</i> Chart No. 40).....	142
Wroten Island (<i>see also</i> Chart No. 40).....	143
<i>Chart No. 40</i> (Honga River)—	
Tubbmans Drain (<i>see also</i> Chart No. 39).....	142
Peanut (<i>see also</i> Chart No. 39).....	142
Gum (<i>see also</i> Chart No. 39).....	142
Wroten Island (<i>see also</i> Chart No. 39).....	143
Horse Point Channel (<i>see also</i> Chart No. 39).....	140
Ware (<i>see also</i> Chart No. 39).....	140
Smoke Point.....	143
Dark Point.....	144
Lakes Cove.....	144
Windmill.....	145
Hickory.....	145
Lower Thoroughfare.....	146
Paul.....	146
Crab Point.....	147
Norman.....	147
Applegarth.....	147
Hooper Strait.....	148
Richland.....	148
Bloodsworth (<i>see also</i> Chart No. 41).....	149
<i>Chart No. 41</i> (Fishing Bay and Nanticoke River)—	
Bloodsworth (<i>see also</i> Chart No. 40).....	149
Hopkins Cove.....	149
Red Sector.....	150
Bell Buoy (<i>see also</i> Chart No. 42).....	150
Jane.....	151
Mud (Dorchester County).....	151
Sharkfin Shoal.....	152
Ware Sands.....	152
Sand Shoal.....	153
Clay Island.....	153
Evans.....	154
Goose Creek.....	154

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

Chart No. 41 (Fishing Bay and Nanticoke River)—Continued.

	Page
Duck Island	155
Bungay.....	155
Old House.....	156
Point	156
Hill.....	156
Thorough.....	157
Half Way Mark	157
Flat Rock.....	157
Frog Point.....	158
New.....	158
Hills and Holes.....	158
Roaring Point West.....	159
Bean Shoal.....	159
Outer Hole.....	159
Lower Newfoundland	160
Upper Newfoundland.....	160

Chart No. 42 (Chesapeake Bay, vicinity of Holland Island)—

Northwest Middleground	160
Southeast Middleground.....	161
Boundary.....	161
Holland Straits.....	162
Bell Buoy (<i>see also</i> Chart No. 41).....	150

BOUNDARIES OF CRAB BOTTOMS:

Explanation.....	163
Methods of describing boundaries	163
Surveying methods for relocation of boundaries.....	164
Boundaries of crab bottoms in county ¹	165

Chart No. 40 (Honga River)—

Fox Creek.....	165
Wingate.....	165
Duck Point Cove	166
Jenny Island (<i>see also</i> Chart No. 41).....	166
Okahanikan (<i>see also</i> Charts Nos. 41 and 42).....	167
Grassy (<i>see also</i> Chart No. 41).....	167

Chart No. 41. (Fishing Bay and Nanticoke River)—

Jenny Island (<i>see also</i> Chart No. 40).....	166
Okahanikan (<i>see also</i> Charts Nos. 40 and 42).....	167
Bishop Head.....	167
Grassy (<i>see also</i> Chart No. 40).....	167
Bloodsworth Island (<i>see also</i> Chart No. 42)	168
Great Cove (<i>see also</i> Chart No. 42).....	169

Chart No. 42 (Chesapeake Bay, vicinity of Holland Island)—

Okahanikan (<i>see also</i> Charts Nos. 40 and 41).....	167
Bloodsworth Island (<i>see also</i> Chart No. 41).....	168
Great Cove (<i>see also</i> Chart No. 41).....	169
Northeast Island.....	169
Adam Island.....	170
Spring Island (Dorchester County)	170
Holland Island.....	171
Pry Island.....	172

¹ See separate publications for boundaries of crab bottoms in adjacent counties.

APPENDICES:

Page.

Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.	173
Appendix B. "The Haman Oyster Culture Law" (extract from Second Report of Shell Fish Commission).	177
Appendix C.—Summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.	178
Appendix D.—Statistics of results of the combined operations of the Government and State. .	180

SURVEY OF OYSTER BARS, DORCHESTER COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws¹ authorizing the work and the natural division of the surveying operations² of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.³ The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey in charge of the work of that service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.⁴

The publications prepared and issued by the State under the direction of the Shell Fish Commission consist of annual reports⁵ of all the operations of the Commission performed under the provisions of the laws of Maryland,⁶ including results of biological and economic oyster investigations, methods and results of the hydrographic survey of

¹ See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

² See Appendix C for a summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.

³ These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C. The publications now ready for issue are those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, St. Marys, Baltimore, Kent, Queen Annes, Talbot, and Dorchester Counties.

⁴ The technical records and charts for each county are published separately on account of the requirements of the oyster-culture laws of the State and the practical considerations which make it desirable to have each county "opened up" for oyster culture as soon as practicable after the completion of its survey. For these reasons and the fact that these reports are each arranged for distribution and use in one county only without reference to other published records, much of the text of this publication is of necessity identical with similar previous publications for other counties.

⁵ These reports can be obtained by application to the Shell Fish Commission, Marine Bank Building, Baltimore, Md. They are issued annually in October, and the first, second, third, and fourth reports are now available for distribution.

⁶ See Appendix B for an extract from the "Second Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman oyster culture law."

the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.¹

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential as a foundation for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.² A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL STATEMENT OF WORK OF COAST AND GEODETIC SURVEY.³

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need very little other summary than is indicated by the published "Charts of Natural Oyster Bars" and the index of hydrographic projections and triangulation stations shown on the county progress maps attached to each report.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

³ For a detail statement of the very large amount of excellent oyster survey work of the Maryland Shell Fish Commission see the "Annual Reports of the Maryland Shell Fish Commission."

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster-survey operations.

The hydrographic projections and published charts are prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shell-fish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to and permanently fixed by published technical descriptions, which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way, and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County":

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last 65 years.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY IN DORCHESTER COUNTY.

INSTRUCTIONS.

The following letters, together with the laws¹ of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the survey at Washington, have proved very beneficial to the work and are greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,

Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His Excellency Hon. EDWIN WARFIELD,

Governor of Maryland, Annapolis, Md.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the Commissioners, prepare a program of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,

U. S. C. and G. S. Steamer Endeavor, Baltimore, Md.

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides

¹ For these laws see Appendix A.

the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the field and the preparation for publication of oyster charts and technical records in the office at Washington.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster*, the Coast and Geodetic Survey party has had the constant use of the large launch *Inspector* and several other boats furnished by its own service, and the occasional use of the Bureau of Fisheries launch *Canvasback*¹ and the steamer *Governor McLane*² of the State Fishery Force.

The greater part of the equipment of instruments for the operations of both the Government and State has been furnished by the Coast and Geodetic Survey and consists of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.

The field work of the Coast and Geodetic Survey in Dorchester County dates from March 14, 1910, when a subparty was organized and sent out to complete certain unfinished details of triangulation in Talbot County and to take up the overlapping triangulation between Dorchester and Talbot Counties.³ This party first went to St. Michaels, then to Cambridge, and finally to Oxford, where the main party on the house boat was joined at the end of April.

On April 30, 1910, the house boat *Oyster* was towed from Baltimore by the State steamer *McLane* to an anchorage in Tar Creek near Bellevue. While at this harbor the house boat was cleaned, painted, and generally overhauled for the season's work, and at the same time triangulation was carried on in Choptank River and its tributaries.

On May 30, 1910, the house boat shifted her anchorage to Tred Avon River off Oxford, from which point a small amount of field work was done in Dorchester County along with the work in Talbot County.

On June 30, 1910, the *Oyster* was towed to an anchorage off Cambridge, where she remained until the completion of the overlapping field work in Choptank River of both Dorchester and Talbot Counties.

On July 20, 1910, the house boat *Oyster* was towed from Cambridge to an anchorage off Solomons Island in the mouth of the Patuxent River. A greater part of the field work along the Chesapeake Bay shore of Dorchester County was carried on from this harbor. During weather too rough to work in the open Chesapeake Bay, considerable work was also done from this point in checking up descriptions of triangulation stations required for the preparation of the publications covering Calvert, St. Marys, and Charles Counties.

¹ By courtesy of Dr. H. F. Moore, United States Bureau of Fisheries.

² By courtesy of Capt. James A. Turner, commanding.

³ The field work of Dorchester County was so intermixed with that of Talbot County that the chronological statement of the work in one of these counties necessarily includes a considerable part of the work of the other county.

On August 11, 1910, the *Oyster* was moved across the Chesapeake Bay to an anchorage in Honga River off Hoopers Island Wharf. A greater part of the oyster-survey work along the lower Chesapeake Bay shore of Dorchester County, as well as that of Honga River and Fishing Bay, was carried on from this point as headquarters.

On September 30, 1910, the field work in the southern half of Dorchester County being completed, the house boat *Oyster* was towed by the steamer *McLane* to the Little Choptank River and anchored off the town of Madison, where she remained for over two months while oyster-survey operations were being carried on in the Little Choptank River and its many tributaries.

On December 4, 1910, the house boat *Oyster* was moved to the northern side of Little Choptank River to an anchorage in the mouth of Hudson Creek, where she remained in spite of bad weather and ice until the practical completion of the oyster-survey work in Dorchester County.

On December 15, 1910, the field work of Dorchester County was completed, and as this was the last county to be surveyed, this date also marks the completion of all the field work of the Maryland Oyster Survey, with the exception of the two days, the 20th and 21st of June, 1912, when a small party, under the charge of Mr. Frank W. Seth, surveyman in the Coast and Geodetic Survey, was put in the field to complete necessary details of triangulation in Talbot and Dorchester Counties.

The office work connected with the oyster survey of Dorchester County, including the computations of geographic information and the drafting necessary for the preparation for publication of the oyster charts and the technical records of that county, was carried on intermittingly with the office work of other counties from the beginning of the field work in Dorchester County on March 14, 1910, to the time of filing of the certified oyster charts and technical records in the archives of the Maryland Shell Fish Commission and with the clerk of the circuit court of Dorchester County on August 17, 1912.

STATISTICS.¹

Landmarks and triangulation signals erected.....	156
Monuments planted to mark triangulation stations.....	156
Triangulation stations occupied for observations of horizontal angles.....	161
Old triangulation stations recovered.....	65
New triangulation stations established.....	125
Total old and new triangulation stations marked and described.....	190
Linear miles of shore line covered by triangulation (approximate).....	270
Square miles covered by triangulation (approximate).....	330
Hydrographic projections prepared and completed as records of oyster boundaries.....	21
Triangles computed.....	380
Geographic positions computed.....	170
Corners of oyster bar and crab bottom boundaries established by computation.....	671
Back azimuths and distances computed from corners of boundaries to triangulation stations.....	2,013
Descriptions of triangulation stations prepared for publication.....	190
Descriptions of oyster bar and crab bottom boundaries prepared for publication.....	135
"Charts of Natural Oyster Bars" prepared for publication.....	8
Progress map prepared for publication.....	1

¹ These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of this county, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland. See Appendix D of this publication for "Statistics of results of combined operations of the Government and the State."

GENERAL REMARKS.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore, of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unflinching tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the Commission, who, as editor of the Commission's annual report and commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Mr. Benjamin K. Green, treasurer of the Commission, who has looked after the equipment and commissary of the house boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Mr. Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.¹

The charts of the natural oyster bars of Dorchester County published by the Coast and Geodetic Survey from results of the surveys of the Government in cooperation with the Maryland Shell Fish Commission consist of eight sheets covering all the oyster-producing waters of that county. They are published on the large scale of 1 part in 20,000 (approximately $3\frac{1}{16}$ inches to a statute mile) and are constructed on polyconic projections; and all information shown on them is based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the circuit court of Dorchester County and in the office of the Maryland Shell Fish Commission, as required by the oyster laws of Maryland.

In addition to the oyster bar and other boundaries, the charts show the location and name of all landmarks (United States Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography² necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the heading "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a particular oyster bar or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington; D. C.

² Much of the detail of the inshore topography was obtained from the excellent map of Dorchester County, prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the United States Geological Survey.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shell fish industries. The 1-fathom contour (6 feet) and the 5-fathom curve (30 feet) correspond in a general way to the inner and outer limits of all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars, and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with Dorchester County are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart within the boundaries of the different shell fish bottoms.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Dorchester County, like those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, St. Marys, Baltimore, Kent, Queen Annes and Talbot counties, have been prepared under the direction of the hydrographic engineer of the Commission. They are constructed on polyconic projections on the scales of 1 part in 5,000 or 1 part in 10,000 as the needs of oyster culture may require, and the information shown on them is based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster law must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to the area under consideration, and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as possible.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in the Marine Bank Building at Baltimore.

PROJECTIONS.

The polyconic projections¹ covering Dorchester County waters are 21 in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, but the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission were plotted by the draftsman of the Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the archives of the Shell Fish Commission.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the United States Coast and Geodetic Survey in Dorchester County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress maps² accompanying the first and second annual reports of the Maryland Shell Fish Commission were prepared under the direction of the hydrographic engineer of the Commission. They are on the scale of 1 part in 400,000, and show the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey.

¹ For the scheme of these projections see the progress map at the end of this publication.

² These maps and reports can be obtained by application to Maryland Shell Fish Commission, Marine Bank Building, Baltimore, Md.

BOUNDARIES OF THE COUNTY WATERS.¹

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line² between the waters "within the territorial limits" of Dorchester County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the "oyster" charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:³

Commencing at the head of the oyster-producing waters of Choptank River on the channel boundary line between Dorchester County and Talbot County; thence following the channel boundary line between Talbot County and Dorchester County down the upper Choptank River to a point situated about half way between the town of Choptank and Cabin Creek; thence continuing down the channel boundary line of the upper Choptank River as laid down on "Chart No. 35, Natural Oyster Bars, Maryland" around Chancellors Point and pass the city of Cambridge to the entrance of upper Choptank River between Castle Haven Point and Island Creek; thence along the boundary line between Talbot County and Dorchester County in the lower Choptank River as laid down on "Charts Nos. 36 and 37, Natural Oyster Bars, Maryland," to a point in the Chesapeake Bay entrance of the lower Choptank River defined by the intersection of this boundary line with a straight line defined at its northwestern end by a point situated on Blackwalnut Point in latitude $38^{\circ} 40' 06.6''$ and longitude $76^{\circ} 20' 24.7''$ and defined at its southeastern end by a point situated on Cook Point in latitude $38^{\circ} 37' 55.7''$ and longitude $76^{\circ} 17' 28.7''$; thence in a straight line across the southeastern half of the Chesapeake Bay entrance of the lower Choptank River to a point situated on Cook Point defined by latitude $38^{\circ} 37' 55.7''$ and longitude $76^{\circ} 17' 28.7''$; thence in a southeasterly direction along the mean low-water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on the northern side of Tripps Bay defined by latitude $38^{\circ} 36' 10.4''$ and longitude $76^{\circ} 16' 21.8''$; thence in a straight line across the eastern end of Tripps Bay to a point situated on the southern side of the eastern end of Tripps Bay defined by latitude $38^{\circ} 35' 52.7''$ and longitude $76^{\circ} 16' 05.1''$; thence in a southwesterly direction along the mean low-water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on the northeastern side of the entrance of Brannock Bay defined by latitude $38^{\circ} 35' 33.9''$ and longitude $76^{\circ} 16' 23.8''$; thence in a straight line across the entrance of Brannock Bay to a point situated on Mills Point on the southwestern side of the entrance of Brannock Bay defined by latitude $38^{\circ} 35' 07.2''$ and longitude $76^{\circ} 17' 13.2''$; thence in a southwesterly direction along the mean low-water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on Hills Point on the northern side of the entrance of Little Choptank River defined by latitude $38^{\circ} 33' 48.6''$ and longitude $76^{\circ} 18' 41.8''$; thence in a straight line across the entrance of Little Choptank River to a point situated on James Island on the southern side of Little Choptank River defined by latitude $38^{\circ} 31' 44.9''$ and longitude $76^{\circ} 20' 01.9''$; thence following the northern and western side of James Island along the mean low-water line or across the mouth of all inlets less than

¹For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

²See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

³Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on the southern end of James Island defined by latitude $38^{\circ} 30' 07.6''$ and longitude $76^{\circ} 20' 19.3''$; thence in a straight line across the entrance of Oyster Creek to a point situated on the southern side of the entrance of Oyster Creek defined by latitude $38^{\circ} 29' 51.9''$ and longitude $76^{\circ} 20' 25.4''$; thence in a southeasterly direction along the mean low-water line across the mouth of all inlets less than 100 yards in width, as the case may be, along the eastern shore of Chesapeake Bay across the entrance of Punch Island Creek to a point situated on the northern side of the entrance between two marsh islands into the extreme northern end of Tar Bay defined by latitude $38^{\circ} 22' 48.6''$ and longitude $76^{\circ} 16' 46.7''$; thence in a straight line across the entrance of the northern end of Tar Bay to a point situated on the northern end of a marsh island defined by latitude $38^{\circ} 22' 33.6''$ and longitude $76^{\circ} 16' 45.0''$; thence in a southerly direction following the western side of a marsh island along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on the southern end of a marsh island on the northern side of the main northern entrance of Tar Bay defined by latitude $38^{\circ} 21' 49.2''$ and longitude $76^{\circ} 16' 31.0''$; thence in a straight line across the main northern entrance of Tar Bay to a point situated on the northern end of Barren Island defined by latitude $38^{\circ} 20' 53.4''$ and longitude $76^{\circ} 16' 01.5''$; thence following the western and southern side of Barren Island along the mean low-water line or across the mouth of all inlets less than 100 yards in width, as the case may be, to a point situated on the southern end of Barren Island defined by latitude $38^{\circ} 18' 39.8''$ and longitude $76^{\circ} 14' 37.5''$; thence in a straight line across the southern entrance of Tar Bay to a point situated on Pons Point on the western side of Upper Hooper Island defined by latitude $38^{\circ} 18' 24.0''$ and longitude $76^{\circ} 13' 27.5''$; thence in a southeasterly direction following the western side of Upper Hooper Island, Middle Hooper Island, and Lower Hooper Island along the mean low-water line or across the causeways and bridges connecting these islands and the mouths of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on the southern side of Lower Hooper Island on the northwestern side of the entrance of Hooper Strait defined by latitude $38^{\circ} 13' 57.7''$ and longitude $76^{\circ} 07' 56.5''$; thence in a straight line across the Chesapeake Bay entrance of Hooper Strait to a point situated on the northwestern side Bloodsworth Island on the southern side of the entrance of Hooper Strait defined by latitude $38^{\circ} 11' 40.6''$ and longitude $76^{\circ} 05' 25.2''$; thence in a southerly direction following the western side of Bloodsworth Island along the mean low-water line or across the mouth of all inlets less than 100 yards in width, as the case may be, to a point situated on the southwestern end of a part of Bloodsworth Island known as Billys Island defined by latitude $38^{\circ} 09' 23.8''$ and longitude $76^{\circ} 05' 09.1''$; thence in a straight line across the channel between Billys Island and Adam Island to a point situated on the northern end of Adam Island defined by latitude $38^{\circ} 09' 14.7''$ and longitude $76^{\circ} 05' 14.0''$; thence following the northern and western side of Adam Island along the mean low-water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on the southern end of Adam Island defined by latitude $38^{\circ} 08' 16.4''$ and longitude $76^{\circ} 05' 09.0''$; thence in a straight line across the channel between Adam Island and Holland Island to a point on the northern end of Holland Island defined by latitude $38^{\circ} 08' 06.6''$ and longitude $76^{\circ} 05' 27.8''$; thence in a southerly direction following the western side of Holland Island along the mean low-water line or across the mouth of all inlets less than 100 yards in width, as the case may be, to a point on the southern end of Holland Island defined by latitude $38^{\circ} 06' 36.4''$ and longitude $76^{\circ} 05' 31.6''$; thence in a straight line to a point situated on the boundary line between Dorchester County and Somerset County on the southern side of the Chesapeake Bay entrance of Holland Straits about $1\frac{1}{2}$ miles north-northeast of Holland Island Bar Light defined by latitude $38^{\circ} 04' 40.8''$ and longitude $76^{\circ} 04' 14.8''$; thence in a straight line along the Holland Straits boundary line between Dorchester County and Somerset County to a point on the western side of Pry Island on the eastern side of Holland Straits defined by latitude $38^{\circ} 05' 44.1''$ and longitude $76^{\circ} 03' 44.6''$; thence in a straight line along the Holland Straits boundary line between Dorchester County and Somerset County across the mouth of Pry Cove to a point on the western side of a small marsh island on the eastern side of Holland Straits defined by latitude $38^{\circ} 06' 39.9''$ and longitude $76^{\circ} 03' 17.8''$; thence in a straight line diagonally across Holland Straits along the boundary line between Dorchester County and Somerset County to a point on the southeastern side of Bloodsworth Island on the northwestern side of Holland Straits defined by latitude $38^{\circ} 08' 50.6''$ and longitude $76^{\circ} 01' 53.4''$; thence in a straight line across the western half of Upper Tangier Sound along the boundary line between Dorchester County and Somerset County to a point situated in Tangier Sound about $1\frac{1}{4}$ miles west of upper land end of Deal Island Wharf and $2\frac{1}{2}$

miles south by east of Sharkfin Shoal Light defined by latitude $38^{\circ} 10' 08.1''$ and longitude $76^{\circ} 58' 40.6''$; thence in a straight line along the Tangier Sound boundary line between Dorchester County and Somerset County to a point in Tangier Sound entrance of Nanticoke and Wicomico Rivers situated about $\frac{7}{8}$ mile east-southeast of Sharkfin Shoal Light defined by latitude $38^{\circ} 11' 50.3''$ and longitude $75^{\circ} 58' 20.8''$; thence along the boundary line between Dorchester County and Somerset County, up the channel of Nanticoke River, pass Roaring Point and Ragged Point to a point on the channel boundary line between Dorchester County and Somerset County situated about 2 miles north of the town of Bivalve, all as laid down on "Chart No. 41, Natural Oyster Bars, Maryland," thence continuing up the Nanticoke River along the channel boundary line between Dorchester County and Somerset County to the head of the oyster-producing waters.

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the United States Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Baltimore," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county and the waters contiguous to but not within the territorial limits of adjacent counties.

This boundary line has been delineated on the "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and is technically described and defined as follows:¹

Commencing at a point in the Chesapeake Bay entrance of the lower Choptank River defined by the intersection of the boundary line between Dorchester County and Talbot County as laid down on "Charts Nos. 36 and 37, Natural Oyster Bars, Maryland," with a straight line defined at its northwestern end by a point situated on Blackwalnut Point in latitude $38^{\circ} 40' 06.6''$ and longitude $76^{\circ} 26' 24.7''$ and defined at its southeastern end by a point situated on Cook Point in latitude $38^{\circ} 37' 55.7''$ and longitude $76^{\circ} 17' 28.7''$; thence along the boundary line between Dorchester County and Talbot County passing into Chesapeake Bay south of Sharps Island as laid down on "Charts Nos. 36 and 37, Natural Oyster Bars, Maryland," to a point in Chesapeake Bay about $5\frac{1}{2}$ miles southwest of Sharps Island Light and $5\frac{3}{4}$ miles northwest of James Island defined by latitude $38^{\circ} 34' 29.6''$ and longitude $76^{\circ} 26' 17.0''$; thence in a straight line in a southerly direction with Chesapeake Bay to a point situated in Chesapeake Bay about $4\frac{1}{2}$ miles west of the southern end of James Island defined by latitude $38^{\circ} 30' 00.0''$ and longitude $76^{\circ} 25' 30.0''$; thence in a straight line in a southeasterly direction with Chesapeake Bay to a point situated in Chesapeake Bay about $2\frac{3}{4}$ miles east of Cove Point Light defined by latitude $38^{\circ} 23' 10.3''$ and longitude $76^{\circ} 20' 00.0''$; thence in a straight line in a southerly direction with Chesapeake Bay to a point situated in Chesapeake Bay about $3\frac{1}{8}$ miles northeast of Cedar Point Light defined by latitude $38^{\circ} 19' 37.7''$ and longitude $76^{\circ} 19' 19.0''$; thence in a straight line in a southerly direction with Chesapeake Bay to a point situated in Chesapeake Bay about $2\frac{3}{4}$ miles east of Cedar Point Light defined by latitude $38^{\circ} 17' 58.0''$ and longitude $76^{\circ} 18' 59.7''$; thence in a straight line in a southeasterly direction with Chesapeake Bay to a point situated in Chesapeake Bay about $5\frac{3}{8}$ miles west of Holland Island Bar Light in latitude $38^{\circ} 04' 34.8''$ and longitude $76^{\circ} 12' 01.0''$; thence in a straight line in an easterly direction across the eastern half of Chesapeake Bay to a point situated on Holland Island Bar Light defined by latitude $38^{\circ} 04' 07.3''$ and longitude $76^{\circ} 05' 45.0''$; thence in a straight line in a northeasterly direction toward the entrance of Holland Straits to a point situated about $1\frac{1}{2}$ miles north-northeast of Holland Island Bar Light on the boundary line between Dorchester County and Somerset County on the southern side of the Chesapeake Bay entrance of Holland Straits defined by latitude $38^{\circ} 04' 40.8''$ and longitude $76^{\circ} 04' 14.8''$.

¹Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION.

The oyster laws of Maryland authorizing the survey to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of location and character of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking a landmark has only an indefinite idea of its location. They gradually proceed from description of the general locality of a landmark to the descriptions of its immediate surroundings. This is followed by specific details of the character of the center and reference marks and a "round" of reference angles and distances which in themselves frequently contain enough information to furnish an independent and reliable location of the triangulation station.

METHOD OF DESCRIBING TRIANGULATION STATIONS.

The separate descriptions of triangulation stations should not be used without reading the following explanation of the method of describing the triangulation stations, as it contains certain details that are common to all the landmarks described in this publication and which are omitted in the separate descriptions as being needless repetitions:

Name.—The title at the top of each separate description is the name by which the landmark or triangulation station is known and designated in all work and published oyster records or oyster charts of both the Government and State. The selection of the name is usually left to the triangulator establishing the station, and it may or may not have geographic or other significance in reference to the locality.

General locality.—Under this heading is given the general locality of the landmark in reference to well-known and prominent natural or artificial features, such as the nearest body of water, town, river, steamer wharf, well-defined point of land, church, or any other feature that is likely to remain both permanent and prominent.

This heading also covers a reference to the published chart or map which shows the location of the station most clearly. Nearly all the triangulation stations described in this publication are plainly indicated by name and a triangulation symbol on the published charts of oyster bars of Maryland. In this case they are referred to by serial number only, the words "charts of oyster bars of Maryland" being omitted to avoid needless repetition. These published oyster charts are on the large scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inches to a statute mile) and show the locations of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Immediate locality.—Under this heading is given the description of the "observed station" in reference to its immediate surroundings. This is supposed to include a statement of the station's estimated elevation above high water or some other well-defined level of the locality, such as a road or house; the character of the ground on which it is located, such as marsh land, sand beach, cultivated field, or meadow; estimated bearings in points of the compass and estimated distances in yards *from* (not *to*) easily recognized features, such as extreme end of point, edge of bluff, bank of creek, line of telephone poles, shore line, barn, house, fence, ditch, trees, or any other definite detail, such as being on range with the tangent of an island and a church; and so forth.

When a standard monument has been established near the station as a "reference station," this heading also covers a statement of the true bearing of the monument in degrees and minutes and its measured distance in meters, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached and might be mistaken for the center mark of the "observed station" unless special attention is called to it.

The distinction between the "observed station" and "reference station" should be carefully noted by anyone making use of the description of stations for any future surveying operations.

The "observed station" is located at the particular triangulation point covered by the description of stations and is the one whose geographic position is first computed, as it is the point which was "occupied" and "observed on" for horizontal angles. However, in spite of the primary importance of the location of the "observed station," it will be noted from the description of stations that frequently it is not marked as well as the "reference station," and in some instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate "observed stations" on edges of banks and ends of points of land, which in the tidewater section of Maryland generally means they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the great need of "reference stations," if the frequent reestablishment of a new framework of triangulation is to be avoided.

The chief reason and need for the establishment of the "reference station," or secondary station, as it might be well named, is explained in the preceding paragraph, but in several instances other reasons, such as the location of the "observed station" on an unstable sand dune, in a cultivated field, in front of a residence, or other places objectionable to the landowner, have led to establishment of "reference stations." The location of the "reference station" in relation to the "observed station" is fixed

for plotting on charts or for computation of its geographic position by checked measurements of its distances and azimuth from the "observed station."¹

Marks.—Under this heading is given a description of the character of the permanent monuments or other marks of the location of the "observed station," and of the "reference station" where one has been established.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground, unless otherwise stated.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

References.—Under this heading are given the "rounds" of directions and distances to all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described, this, if possible, being a lighthouse, church spire, or other permanent and prominent point. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing² of the initial object is always given in parentheses alongside its name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by horizontal angles or for the relocation of corner buoys of oyster-bar boundaries by the method of compass directions described in this publication under the heading of "Boundaries of oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters,"

¹ Geographic coordinates (latitude, longitude, distance, and azimuth) relating to any of the "observed stations" or of the "reference stations" described in this publication can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² The mean magnetic variation for Dorchester County was $6^{\circ} 00'$ west of north in 1911 and increasing at the rate of $5'$ yearly.

however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of angular measure with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

WEATHER BUREAU STAFF.

General locality.—Eastern side of Tred Avon River in the town of Oxford. (See Chart No. 35.)

Immediate locality.—Observed station is in park south of high and primary schools, 55 yards east of shore of Tred Avon River, 55 yards west of Morris Street, and in center of circle of trees.

Marks.—Observed station is center of galvanized iron staff on square galvanized angle-iron tower.

References.—None necessary.

FIRST.

General locality.—Eastern shore of Tred Avon River in town of Oxford about $1\frac{1}{8}$ mile north of railroad wharves. (See Chart No. 35.)

Immediate locality.—Observed station is about 8 feet above high water, 2 yards east-southeast of edge of bank, 4 yards east by north of point of bank, 4 yards northeast of edge of bank at small gully, 2 yards south of corner fence post, and 35 yards west of house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bach" (S $17^{\circ} 38'$ W)	0	00	00	$5\frac{1}{8}$ mile.
Right peak of small house	51	59	..	$1\frac{1}{8}$ miles.
Right peak of modern house	67	10	..	$1\frac{1}{8}$ miles.
Left peak of small house	128	37	..	$1\frac{1}{8}$ miles.
Nail in blaze in fence post	207	52	00	4.98 meters.
Nail in blaze in apple tree (20 inches diam- eter)	237	43	30	11.94 meters.
Nail in blaze in apple tree (12 inches diam- eter)	266	24	50	14.56 meters.
Windmill	346	43	..	$\frac{1}{4}$ mile.

BACH.

General locality.—Eastern shore of entrance to Tred Avon River on Bachelor Point about $1\frac{3}{8}$ miles north-northeast of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is in cultivated field about 6 feet above high water, 30 yards east of edge of bank, 70 yards north-northeast of edge of bank on range with Choptank River Light, and 100 yards south by west of edge of bank of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S $16^{\circ} 59'$ W)	0	00	00	$1\frac{3}{8}$ miles.
Tangent of Benoni Point	55	29	..	$1\frac{1}{4}$ miles.
Left peak of roof of house	147	25	..	$1\frac{1}{8}$ miles.
Left corner of burnt house	166	05	..	$1\frac{1}{8}$ miles.
Right corner of house	211	35	..	$\frac{1}{4}$ mile.
Left corner of left chimney on very large house	240	46	..	$5\frac{1}{8}$ mile.
"Large Water Tank"	338	00	20	$2\frac{3}{4}$ miles.

BOONE.

General locality.—Northeastern shore of Choptank River about $\frac{3}{8}$ mile northwest of entrance to Boone Creek, $\frac{1}{2}$ mile southeast of Bachelor Point, and $1\frac{1}{8}$ miles northeast of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is about 5 feet above high water, 13 yards northeast of edge of tree-fringed bank, 60 yards south-southwest of right corner of house, and 50 yards south-southeast of large apple tree.

Marks.—Observed station is center point of triangle on standard cement monument with top 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 33° 54' W).....	0	00	00	 1¼ miles.
Nail in blaze in locust tree (5 inches diameter).....	21	01	40	 10.26 meters.
Nail in blaze in locust tree (10 inches diameter).....	65	31	10	 20.59 meters.
Near peak of house.....	107	59	..	 ¾ mile.
Right corner of house.....	159	12	..	 57 yards.
Near peak of house.....	195	28	..	 ¾ mile.
Nail in blaze in locust tree (4 inches diameter).....	323	14	00	 13.02 meters.

ENTER.

General locality.—Northern shore of Island Creek on point at east side of entrance to a small cove, about $\frac{1}{8}$ mile northeast of Choptank River, and $1\frac{3}{8}$ miles east-northeast of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is in cultivated land about 6 feet above high water, 16 yards north of edge of bank of creek, 18 yards south-southeast of edge of bank of cove, 30 yards east-northeast of outlet of cove, and 250 yards west by south of frame house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 72° 00' W)....	0	00	00	 1¾ miles.
Nail in blaze in locust tree (6 inches diameter) 67	05	40	.....	39.96 meters.
Nail in blaze in cedar tree (10 inches diameter).....	109	17	20	 16.91 meters.
Left corner of left chimney of house.....	117	35	..	 2 miles.
Left corner of house.....	173	35	..	 ½ mile.
Near corner of house.....	204	11	..	 1½ miles.
"Large Water Tank".....	301	37	00	 2½ miles.
Nail in blaze in locust tree (4 inches diameter).....	357	13	40	 23.93 meters.

LANDEYE.

General locality.—Northeastern shore of Choptank River on point at south side of entrance to Island Creek, about $1\frac{1}{2}$ miles east of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is in cultivated land about 5 feet above high water, 15 yards east-southeast of edge of bank, 50 yards southwest of fringe of trees and bushes, 55 yards south-southwest of point of field and end of fringe of trees and bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 83° 39' W).....	0	00	00	1¼ miles.
Chimney of house near Bachelors Point.	48	33	..	1¼ miles.
Left corner of barn	122	21	..	¾ mile.
Left corner of barn	230	18	..	¾ mile.
"Large Water Tank"	297	25	50	2¾ miles.

CHOPTANK RIVER LIGHT.

General locality.—In Choptank River about 1¼ miles southeast of Benoni Point, 1 mile south of entrance to Tred Avon River, and 8¼ miles east of Blackwalnut Point. (See Charts Nos. 35 and 37.)

Immediate locality.—Observed station is on hexagonal screw-pile structure known as Choptank River Light House.

Marks.—Observed station is center of lantern on Choptank River Light House.

References.—

	°	'	"	
Chlora (S. 57° 04' E).....	0	00	00	2¾ miles.

BENONI 2.

General locality.—Northern shore of Choptank River on Benoni Point at western side of entrance to Tred Avon River, about 1¾ miles northwest of Choptank River Light. (See Progress map.)

Immediate locality.—Observed station is about 5 feet above high water, 9 yards south-southwest of foot of knoll and edge of marsh, 4 yards northeast of edge of bank, 25 yards east-southeast of point of bank, 30 yards north by west of point of marsh, and 100 yards southwest of a cove. Cement monument marking reference station is 7.45 meters N. 42° 02' E of observed station.

Marks.—Observed station is nail in center of 2 by 4 inch stub projecting 4 inches above a 4-inch tile pipe with top of pipe flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Choptank River Light" (S 40° 01' E).....	0	00	00	1¼ miles.
"Large Water Tank"	13	10	20	3¼ miles.
Left corner of house	65	40	..	4¼ miles.
Nail in blaze in waterbush.....	181	09	10	7.68 meters.
Nail in blaze in water bush	231	34	40	4.54 meters.
Near peak of small house.....	245	50	..	1¾ miles.
Left corner of burnt house	261	14	..	2 miles.
REFERENCE STATION	262	02	40	7.45 meters.
Peak of near gable of large house	277	30	..	1¾ miles.
Nail in blaze in waterbush	288	09	40	10.40 meters.
Left corner of house.....	306	56	..	1¾ miles.

CHLORA.

General locality.—Northeastern shore of Choptank River on Chlora Point about 1½ miles south-southeast of entrance to Island Creek, 1½ miles northwest of entrance to LaTrappe Creek, and 2¾ miles southeast of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is about 8 feet above high water, 6 yards east-northeast of edge of bank, 9 yards south of wire fence, and 18 yards north of edge of bank at walnut tree. Cement monument marking reference station is 6.91 meters N. 78° 43' E of observed station.

Marks.—Observed station is hole in center of cement filled tile pipe 4 inches diameter, with top about 2 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above the surface of the ground.

References.—

	°	'	"	
"Choptank River Light" (N 57° 03' W).....	0	00	00	2¾ miles.
Nail in blaze in wild cherry tree (3 inches diameter)	74	39	10	3.11 meters.
Nail in blaze in cedar tree (4 inches diameter)	129	31	00	9.01 meters.

References—Continued.

	°	'	"	
REFERENCE STATION.....	135	46	10	 6.91 meters.
Nail in blaze in walnut tree (14 inches diameter).....	220	12	10	 16.70 meters.
Near peak of house.....	254	53	..	 3 miles.
Spindle on cupola.....	267	24	..	 2¾ miles.
"Large Water Tank".....	294	46	30	 1½ miles.

TRAPPE.

General locality.—Northern shore of Choptank River at west side of entrance to La Trappe Creek about 1½ miles southeast of Chlora Point. (See Chart No. 35.)

Immediate locality.—Observed station is on grassy gravel point about 3 feet above high water, 4 yards north of shore, 6 yards east-northeast of shore, and 17 yards south by east of large cedar tree. Cement monument marking reference station is 12.62 meters N 47° 40' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 2 inches above surface of ground.

References.—

	°	'	"	
"Lan" (N 25° 07' E).....	0	00	00	 ½ mile.
Cedar tree.....	11	05	..	 35 yards.
Red Beacon.....	96	50	00	 ¼ mile.
Right chimney of house.....	130	16	..	 3 miles.
"Black Beacon".....	145	54	40	 ¼ mile.
Northerly peak of Travers Wharf house....	196	15	..	 2½ miles.
Center of smaller water tank.....	241	02	..	 2½ miles.
"Large Water Tank".....	241	44	30	 2½ miles.
Nail in blaze in cedar tree (20 inches diameter).....	294	50	50	 7.23 meters.
REFERENCE STATION.....	350	06	40	 12.62 meters.
Nail in blaze in cedar tree (22 inches diameter).....	353	23	40	 15.99 meters.

GRUBIN.

General locality.—Northern shore of Choptank River on east side of entrance to La Trappe Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on grassy marsh back of gravel beach, about 1 foot above high water, 13 yards east of shore, 13 yards south of shore, 20 yards southeast of extreme end of point, and 100 yards northwest of pond.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Howard" (S 1° 21' W).....	0	00	00	 2¾ miles.
South peak of Travers Wharf house.....	45	02	..	 3 miles.
"Black Beacon".....	51	56	10	 ¼ mile.
Center of smaller water tower.....	86	56	..	 3 miles.
"Large Water Tank".....	87	49	30	 2¾ miles.
Red Beacon.....	90	47	10	 ¼ mile.
South peak of shed.....	153	07	..	 ¾ mile.
Near peak of barn.....	181	58	..	 ¾ mile.
Nail in blaze in stump (7 inches diameter)...	194	47	40	 12 17 meters.
Chimney of house.....	199	51	..	 ¾ mile.
Nail in blaze in cedar tree (5 inches diameter).....	225	34	30	 12.04 meters.

BLACK BEACON.

General locality.—Northeastern shore of Choptank River off entrance to La Trappe Creek about $1\frac{5}{8}$ miles northeast of Horn Point. (See Chart No. 35.)

Immediate locality.—Observed station is on a cylindrical foundation known as La Trappe Creek Outer Light.

Marks.—Observed station is center point of lantern on La Trappe Creek Outer Light.

References.—None necessary.

HOWELLS.

General locality.—Northern shore of Choptank River on Howells Point about $1\frac{5}{8}$ miles east of Horn Point, 2 miles north of entrance to Jenkins Creek, and 2 miles northwest of Hambrooks Bar Beacon. (See Chart No. 35.)

Immediate locality.—Observed station is on a long grassy gravel point about 3 feet above high water, 50 yards south-southeast of old fish shanty and trees, 25 yards south of highest level part of land, 11 yards west of shore, 3 yards east of shore, and $\frac{1}{4}$ mile north of extreme end of Point. Cement monument marking reference station is 22.82 meters N $17^{\circ} 53'$ of observed station.

Marks.—Observed station is nail in center of cedar stub in center of 4-inch tile pipe with top of pipe 4 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Red" (N $78^{\circ} 26'$ E).....	0	00	00	$1\frac{5}{8}$ miles.
South peak of Kirby Wharf house.....	12	35	..	2 miles.
"Hambrooks Bar Beacon".....	44	16	50	2 miles.
Flagstaff on boathouse.....	57	19	..	$1\frac{5}{8}$ miles.
"Dicks Water Tank".....	62	22	10	$1\frac{3}{4}$ miles.
"Cambridge Standpipe".....	69	41	10	$3\frac{3}{4}$ miles.
Spindle on barn cupola.....	137	22	..	$1\frac{3}{4}$ miles.
"Large Water Tank".....	209	51	40	$3\frac{3}{8}$ miles.
"Black Beacon".....	251	22	20	$1\frac{1}{2}$ miles.
Nail in blaze in dead locust tree (15 inches diameter).....	285	21	50	0.83 meters.
Nail in blaze in locust tree (3 inches diameter).....	294	01	40	13.37 meters.
Nail in blaze in pin oak tree (11 inches diameter).....	297	59	10	27.28 meters.
REFERENCE STATION.....	299	26	40	22.82 meters.

RED.

General locality.—Northern shore of Choptank River at eastern side of Dickinsons Bay about $1\frac{5}{8}$ miles east-northeast of Howells Point and $\frac{3}{4}$ mile northwest of Kirby Wharf. (See Chart No. 35.)

Immediate locality.—Observed station is on cultivated land on first high bluff upstream from Howells Point, about 12 feet above high water, 8 yards northeast of edge of bank, 10 yards north of edge of bank, 10 yards east of edge of bank. Cement monument marking reference station is 23.65 meters N $89^{\circ} 58'$ E of observed station and almost on line with east chimney of house.

Marks.—Observed station is nail in stub in center of 2-inch tile pipe with top of pipe 6 inches below surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Hambrooks Bar Beacon" (S $3^{\circ} 39'$ E).....	0	00	00	$1\frac{5}{8}$ miles.
"Cambridge Standpipe".....	0	30	10	3 miles.
"Dicks Water Tank".....	19	34	50	$1\frac{3}{4}$ miles.
Center of silo tower.....	51	38	..	3 miles.
"Large Water Tank".....	102	32	50	$4\frac{3}{4}$ miles.
Near peak of barn with two cupolas.....	148	28	..	1 mile.
REFERENCE STATION.....	229	16	20	23.63 meters.
East chimney of house.....	229	38	..	$\frac{1}{4}$ mile.

References—Continued.

	°	'	"	
Near peak of large barn.....	282	07	..	¾ mile.
Right peak of Kirby Wharf house.....	308	26	..	¾ mile.
Near peak of hospital.....	348	39	..	¾ miles.
"East Cambridge Tall Stack".....	351	07	40	3 miles.

DOUBLE.

General locality.—Northern shore of Choptank River nearly opposite Cambridge, about 1 mile northwest of entrance to Bolingbroke Creek and 1½ miles east of Hambrooks Bar Beacon. (See Chart No. 35.)

Immediate locality.—Observed station is on point of marsh separated from field by a row of locust trees about 12 yards northeast of shore, 20 yards north of shore, 14 yards east of shore, and 30 yards south of a large wild cherry tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"East Cambridge Tall Stack" (S 32° 33' W) ..	0	00	00	1¾ miles.
"Dicks Water Tank".....	51	44	20	2 miles.
"Hambrooks Bar Beacon".....	60	01	00	1½ miles.
"Large Water Tank".....	76	25	40	6½ miles.
Chimney of house.....	107	34	..	2½ miles.
Nail in blaze in wild cherry tree (24 inches diameter).....	142	08	30	26.69 meters.
Nail in blaze in locust tree (5 inches diameter).....	177	10	40	24.92 meters.
Chimney outside of near end of house.....	177	29	..	½ mile.
Nail in blaze in wild cherry tree (4 inches diameter).....	207	20	40	34.66 meters.
Spindle on barn cupola.....	248	23	..	¾ mile.
Chimney of house.....	320	47	..	2¼ miles.
Spindle on cupola.....	347	55	..	2 miles.
Near peak of hospital.....	354	52	..	1¾ miles.

BOLING.

General locality.—Northern shore of Choptank River on an island in entrance to Bolingbroke Creek, about ¾ mile northwest of Chancellors Point and 2 miles east-northeast of Cambridge. (See Chart No. 35.)

Immediate locality.—Observed station is in rushes on a sandy marsh about 3 feet above high water, 6 yards northeast of shore, 7 yards north of shore, 8 yards east of shore, and 160 yards northwest by north of entrance to Bolingbroke Creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"East Cambridge Tall Stack" (S 60° 19' W) ..	0	00	00	1¾ miles.
Chimney outside of left end of mansard roof house.....	33	11	..	2½ miles.
Flagpole on boat house.....	37	05	..	2¼ miles.
"Hambrooks Bar Beacon.....	44	30	00	2¾ miles.
Nail in blaze in cedar tree (8 inches diameter).....	134	40	30	26.53 meters.
Nail in blaze in old cedar stump (13 inches diameter).....	191	39	00	5.29 meters.
Near peak of barn cupola.....	249	14	..	1¾ miles.

Survey of Oyster Bars, Dorchester County, Md.

References—Continued.

	°	'	"	
Near peak of barn.....	270	14	..	1½ miles.
Chimney of house.....	294	34	..	1½ miles.
Nail in blaze in cedar tree (11 inches diam- eter).....	300	25	40	4.56 meters.
Chimney of house.....	313	10	..	1½ miles.

REAR.

General locality.—Northern shore of Choptank River about ¼ mile northwest of Chancellors Point, and ½ mile southeast of entrance to Bolingbroke Creek. (See Chart No. 35.)

Immediate locality.—Observed station is in cultivated field on bluff about 12 feet above high water, 65 yards north of edge of bank, 110 yards northeast of edge of bank and trees, 160 yards east of edge of bank, and 95 yards northwest of bottom of gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Barber" (N 35° 22' E).....	0	00	00	1 mile.
Near corner of square cupola.....	27	51	..	¼ mile.
Chimney of house.....	78	16	..	1½ miles.
Near peak of barn cupola.....	105	00	..	1¼ miles.
Near peak of large barn.....	136	08	..	1¾ miles.
Left peak of large barn.....	177	19	..	1¾ miles.
Barn cupola.....	214	22	..	2 miles.
"Cambridge Standpipe".....	221	13	50	2¾ miles.
"Hambrooks Bar Beacon".....	255	40	50	3 miles.
"Large Water Tank".....	257	19	00	8¼ miles.
Chimney of house.....	280	15	..	1¼ miles.
Chimney outside near end of house.....	288	83	..	1¾ miles.

CHANCELLOR.

General locality.—Northern shore of Choptank River on Chancellors Point about ¾ mile north of entrance of Hurst Creek, and ¾ mile southeast of entrance to Bolingbroke Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on sand and grass point about 1 foot above high water, 35 yards west of shore, 35 yards northeast of shore, 60 yards north by west of extreme end of point, 13 yards south of line of cedar stumps, 27 yards southeast of large lone pine tree, and almost on range of Cambridge Standpipe and left peak of hospital. Cement monument marking reference station is 4.70 meters N 31° 31' W of observed station and almost on line to large lone pine tree.

Marks.—Observed station is nail in cedar stub in center of 4-inch tile pipe with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Cambridge Standpipe" (S 78° 00' W).....	0	00	00	2¾ miles.
REFERENCE STATION.....	70	29	10	4.70 meters.
Nail in blaze in lone pine tree (16 inches diameter).....	71	00	00	24.74 meters.
Southeast corner of square cupola.....	115	45	..	350 yards.
Nail in blaze in cedar stump (16 inches diam- eter).....	122	32	50	12.40 meters.
Chimney of house.....	216	38	..	1¼ miles.
Near peak of house.....	245	53	..	1½ miles.
Chimney on left end of house.....	282	44	..	1¼ miles.
Chimney of house.....	328	52	..	1½ miles.
Nail in blaze in small pine tree.....	350	04	40	23.26 meters.
Left peak of hospital.....	359	06	..	2¾ miles.

BARBER.

General locality.—Northwestern shore of upper Choptank River about 1 mile north-northeast of Chancellors Point and about $\frac{7}{8}$ mile west-southwest of Goose Point. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 2 feet above high water, 12 yards north-northwest of county road and shore, 45 yards west-southwest of a cabin on the county road, 25 yards west of two cedar trees just across road, and 65 yards south of a wire fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe with top 2 inches below base of monument.

References.—

	°	'	"	
"Duck" (N $75^{\circ} 49'$ E).....	0	00	00	 $\frac{7}{8}$ mile.
Nail in blaze in cedar tree (10 inches diameter).....	5	04	50	 19.17 meters.
Smokepipe on wharf house.....	35	48	..	 $1\frac{1}{2}$ miles.
Near peak of house.....	57	06	..	 $1\frac{1}{2}$ miles.
Northwest peak of house.....	92	22	..	 $1\frac{3}{4}$ miles.
Chimney on left end of house.....	116	41	..	 $2\frac{3}{4}$ miles.
Near peak of house with square cupola.....	133	33	..	 $\frac{7}{8}$ mile.
Large lone tree.....	208	40	..	 350 yards.
Nail in blaze in cedar tree (5 inches diameter).....	309	58	40	 36.42 meters.
Nail in blaze in persimmon tree (5 inches diameter).....	323	12	30	 36.01 meters.
Near corner of barn.....	347	15	..	 21.96 meters.
Nail in blaze in cedar tree (10 inches diameter).....	359	16	50	 20.12 meters.

DUCK. (CHOPTANK RIVER.)

General locality.—Northern shore of Choptank River on Goose Point about $\frac{3}{4}$ mile north of Oyster Shell Point and $1\frac{3}{4}$ miles northeast of Chancellors Point. (See Chart No. 35.)

Immediate locality.—Observed station is on edge of sand beach on lower part of point on level with high water, 15 to 20 yards southeast of a group of cedar and persimmon trees. Cement monument marking reference station is 12.61 meters N $28^{\circ} 19'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Jam" (N $35^{\circ} 54'$ E).....	0	00	00	 $1\frac{3}{8}$ miles.
Left peak of large barn.....	46	01	..	 $1\frac{3}{4}$ miles.
Center of roof of house.....	82	31	..	 $1\frac{3}{8}$ miles.
Smokepipe on wharf house.....	115	52	..	 $\frac{7}{8}$ mile.
Left peak of barn cupola.....	160	21	..	 2 miles.
Near corner of square chimney of house.....	174	03	..	 $2\frac{3}{4}$ miles.
Chimney of house.....	192	50	..	 4 miles.
Near corner of square cupola on house.....	197	16	..	 $1\frac{5}{8}$ miles.
Nail in blaze in persimmon tree (2 inches diameter).....	238	59	40	 21.22 meters.
REFERENCE STATION.....	295	47	30	 12.61 meters.
Nail in blaze in persimmon tree (3 inches diameter).....	297	48	50	 15.20 meters.
Nail in blaze in cedar tree (3 inches diameter).....	332	27	20	 14.28 meters.

JAM.

General locality.—Western shore of Choptank River on Jamaica Point opposite entrance to Warwick River. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh point about 3 feet above high water, 25 yards west-northwest of end of wharf, 7 yards north of county road, 11 yards northeast of county road, 13 yards south of shore, 8 yards west-southwest of shore, and 30 yards north by east of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	"	
"Spindle" (N 14° 53' W).....	0	00	00	 ¾ mile.
Chimney outside near end of house.....	16	33	..	 2 miles.
Chimney of large house.....	19	46	..	 2 miles.
"Wick".....	76	04	00	 ¾ mile.
Chimney of house.....	82	48	..	 1 ¼ miles.
Left chimney of large brick house.....	90	07	..	 1 ½ miles.
Left corner of wharf house.....	95	57	20	 49.81 meters.
Right corner of wharf house.....	108	14	00	 46.85 meters.
Nail in first plank on level part of wharf.....	110	03	50	 24.94 meters.
Near peak of large barn.....	144	56	..	 1 ½ miles.
Chimney of house.....	171	30	..	 2 miles.
Near peak of house.....	202	51	..	 2 ¼ miles.
Near peak of house near wharf.....	211	21	..	 2 miles.
Right peak of barn cupola.....	218	30	..	 2 ½ miles.
Near corner of fence.....	269	38	..	 ¼ mile.

SPINDLE.

General locality.—Western shore of upper Choptank River about ¾ mile north of Jamaica Point Wharf. (See Chart No. 35.)

NOTE.—This triangulation landmark was destroyed before this publication was prepared, and therefore it is not described, although its name and location are shown on Chart No. 35.

BANK.

General locality.—Western shore of upper Choptank River about 1 mile north-northwest of Jamaica Point, and 1 ¼ miles southwest of entrance to Cabin Creek. (See Chart No. 35.)

Immediate locality.—Observed station is in a cultivated field on a tree fringed bluff about 20 feet above high water, 10 yards northwest of edge of bluff, 10 yards west of edge of bluff, and 12 yards north of edge of bluff.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	"	
"Raccoon" (N 19° 26' E).....	0	00	00	 ¾ mile.
Left chimney of modern house.....	5	55	..	 1 ¼ miles.
Nail in blaze in branch of double oak tree (12 and 18 inches diameter).....	34	56	40	 7.03 meters.
Chimney of house in woods.....	54	30	..	 1 ½ miles.
Chimney of shanty in woods.....	86	07	..	 1 ½ miles.
Chimney of house.....	103	23	..	 1 ¾ miles.
Nail in blaze in oak tree (8 inches diameter).....	124	13	10	 8.55 meters.
Nail in blaze in cedar tree (7 inches diameter).....	161	00	10	 21.11 meters.
Front peak of house.....	168	29	..	 ¼ mile.

RACCOON.

General locality.—Western shore of upper Choptank River about $\frac{3}{8}$ mile south of entrance to a small creek, $1\frac{1}{2}$ miles north of Jamaica Point, and 1 mile west of entrance to Cabin Creek. (See Chart No. 35.)

Immediate locality.—Observed station is between 2 clumps of trees on sandy marsh about 2 feet above high water, 8 yards northwest of shore, 12 yards west of shore, 16 yards north of shore, and 200 yards southeast of woods beyond marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Blind" (N 52° 15' E).....	0	00	00	$\frac{3}{4}$ mile.
Chimney outside near end of house.....	34	22	..	$1\frac{3}{4}$ miles.
Near peak of modern house.....	41	07	..	$1\frac{1}{8}$ miles.
Chimney of house.....	77	59	..	$1\frac{3}{4}$ miles.
Near peak of house.....	105	09	..	2 miles.
Chimney of house.....	113	14	..	$3\frac{1}{8}$ miles.
Near peak of Jamaica Point Wharf house....	120	42 ⁰⁰	..	$1\frac{1}{2}$ miles.
Left corner of house.....	144	31	..	1 mile.
Nail in blaze in oak tree (10 inches diameter). 155	21	50	..	12.66 meters.
Nail in blaze in large pine tree (12 inches diameter).....	204	45	40	37.12 meters.
Nail in blaze in oak tree (10 inches diameter). 329	46	20	..	26.50 meters.
Chimney outside near end of house.....	350	04	..	$\frac{5}{8}$ mile.

BLIND.

General locality.—Northwestern shore of Choptank River about $\frac{1}{2}$ mile west-northwest of entrance to Cabin Creek, and 2 miles north of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh point between river and line of locust tree about 1 foot above high water, 11 yards north of shore, 15 yards west of shore, 16 yards northeast of shore at duck blind, and 25 yards east by north of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Up" (N 61° 44' E).....	0	00	00	$\frac{3}{4}$ mile.
Chimney outside of near end of old house....	47	17	..	1 mile.
Peak of side gable of modern house.....	57	24	..	$1\frac{1}{4}$ miles.
Right peak of Jamaica Point Wharf house ...	131	24	..	2 miles.
Chimney on house.....	162	44	..	$1\frac{1}{4}$ miles.
Nail in blaze in locust tree (4 inches diameter).....	201	23	50	10.28 meters.
Nail in blaze in locust tree (4 inches diameter).....	226	50	20	7.53 meters.
Nail in blaze in locust tree (6 inches diameter).....	270	06	10	5.72 meters.
Nail in blaze in locust tree (10 inches diameter).....	322	04	50	14.25 meters.

Survey of Oyster Bars, Dorchester County, Md.

UP.

General locality.—Northwestern shore of upper Choptank River about $\frac{3}{4}$ mile north of entrance to Cabin Creek and $2\frac{1}{2}$ miles north-northeast of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 55 yards northwest of extreme end of point, 25 yards west of shore, and 20 yards north of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 8 inches above surface of marsh. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Myrtle" (S 60° 25' E).....	0	00	00	 $\frac{3}{8}$ mile.
Peak of side gable of modern house.....	34	14	..	 1 mile.
Chimney of old house.....	36	10	..	 $\frac{3}{8}$ mile.
Tangent of point.....	77	45	..	 1 mile.
House.....	111	45	..	 $1\frac{7}{8}$ miles.
Tangent of point.....	122	02	..	 $\frac{3}{8}$ mile.
House.....	273	00	..	 $1\frac{1}{2}$ miles.
Tangent of point.....	305	15	..	 175 yards.

MYRTLE.

General locality.—Eastern shore of upper Choptank River about $\frac{1}{2}$ mile north of entrance to Cabin Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 17 yards east of shore, 20 yards south of extreme end of point, 15 yards southwest of small gut, and 250 yards west of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hut" (S 7° 47' W).....	0	00	00	 $\frac{3}{8}$ mile.
Left peak of old barn.....	6	41	..	 $\frac{7}{8}$ mile.
Tangent of point.....	32	14	..	 $\frac{7}{8}$ mile.
Chimney of house.....	53	01	..	 2 miles.
Chimney outside east end of house.....	78	42	..	 $1\frac{1}{4}$ miles.
Near peak of shanty.....	157	18	..	 $\frac{3}{4}$ mile.
Stack of cannery at Choptank.....	180	51	..	 $2\frac{3}{4}$ miles.
Left peak of house.....	194	19	..	 $2\frac{1}{4}$ miles.
Tangent of point.....	203	56	..	 $\frac{1}{4}$ mile.
Right peak of roof showing over woods.....	314	37	..	 $\frac{3}{4}$ mile.
Large lone pine tree.....	333	11	..	 300 yards.

HUT.

General locality.—Eastern shore of upper Choptank River on north side of entrance to Cabin Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 15 yards east of shore, 50 yards northwest of shore, 20 yards northeast of extreme end of point, 90 yards southwest of a hut, and 80 yards south-southwest of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"House" (S 46° 38' W).....	0	00	00	 $\frac{3}{4}$ mile.
Chimney of house.....	25	27	..	 $1\frac{3}{4}$ miles.
Chimney outside of house.....	60	33	..	 $1\frac{3}{4}$ miles.
Cupola on barn.....	132	48	..	 $2\frac{1}{2}$ miles.
Right corner of hut.....	173	53	20	 90 yards.

References—Continued.

	°	'	"	
Chimney outside near end of old house	242	13	..	½ mile.
Peak of near gable of modern house	281	42	..	½ mile.
Right peak of old barn	337	43	..	¾ mile.

HOUSE.

General locality.—Eastern shore of Choptank River about ¼ mile south of entrance to Cabin Creek, 1 mile north of entrance to Warwick River, and on south side of a small cove. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 14 yards south of shore, 26 yards southeast of shore, 35 yards southwest by west of shore and mouth of small creek in marsh and 175 yards north of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Saw" (S 6° 22' W)	0	00	00	¾ mile.
Two pine trees	5	49	..	..
Left peak of shanty	126	49	..	1½ mile.
Chimney outside near end of house	131	06	..	1½ miles.
Near peak of house	137	29	..	1½ miles.
Tangent of point	172	07	..	¼ mile.
Stack of cannery at Choptank	189	09	..	4 miles.
Near peak of house	193	59	..	4½ miles.
Near peak of shack	219	48	..	¾ mile.
Cut in woods	348	16	..	½ mile.

SAW.

General locality.—Eastern shore of Choptank River about ½ mile northeast of entrance to Warwick River, and 1 mile northeast by east of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 22 yards east of shore, 26 yards southeast of shore, 37 yards northeast of shore, 200 yards west-northwest of dense woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Wick" (S 19° or' W)	0	00	00	½ mile.
Right peak of Jamaica Point Wharf house	24	57	..	1 mile.
Left corner of very wide chimney on brick house	32	14	..	1¼ miles.
Right corner of railing on roof of house	70	36	..	1½ miles.
Chimney of house	86	44	..	1¼ miles.
Near peak of house	135	04	..	1¼ miles.
Chimney outside left end of house	152	42	..	2 miles.
Cupola or steeple	181	04	00	5 miles.
Near corner of brick house	311	51	..	½ mile.

WICK.

General locality.—Eastern shore of upper Choptank River on northern side of entrance to Warwick River about ¾ mile northeast of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on sandy ridge between beach and marsh about 2 feet above high water, 8 yards northeast of shore, 10 yards north of shore, 9 yards east of shore, 100 yards southeast by east of extreme end of point, and 35 yards northwest of two pine trees. Cement monument marking reference station is 8.26 meters N 25° 00' E of observed station.

Marks.—Observed station is nail in cedar stub with top flush with the surface of the ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

<i>References.</i> —	°	'	"	
"War" (S 2° 08' E).....	0	00	00	 5/8 mile.
Near peak of house in trees.....	2	21	..	 5/8 mile.
Smoke pipe on wharf house.....	27	13	..	 2 3/8 miles.
Tangent of Goose Point.....	45	55	..	 1 7/8 miles.
Right peak of Jamaica Point Wharf house...	62	29	..	 5/8 mile.
Right corner of very wide chimney on brick house.....	68	42	..	 7/8 mile.
Left corner of cupola on roof.....	115	10	..	 1 1/8 miles.
Near peak of house.....	167	00	..	 2 3/8 miles.
REFERENCE STATION.....	207	07	20	 8.26 meters.
Nail in blaze in pine tree (12 inches diameter).....	296	59	10	 30.06 meters.
Right pine tree.....	325	53	20	 400 yards.

WAR.

General locality.—Eastern shore of upper Choptank River on southern side of entrance to Warwick River about 3/4 mile east-southeast of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on northern side of point of marsh about 1 foot above high water, 45 yards south of shore, 35 yards southeast of shore, 45 yards east of shore, and 35 to 45 yards southwest to west of woods. Cement monument marking reference station is 4.95 meters S 12° 18' E of observed station.

Marks.—Observed station is nail in center of cedar stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

<i>References.</i> —	°	'	"	
"Gander" (S 11° 26' W).....	0	00	00	 3/4 mile.
Chimney of house.....	17	12	..	 2 miles.
Smoke pipe on wharf house.....	23	00	..	 1 3/4 miles.
Left chimney of small house.....	26	05	..	 2 miles.
Square cupola on large house.....	45	53	..	 3 1/4 miles.
Left peak of house.....	66	11	..	 1 1/8 miles.
Right corner of very wide chimney on brick house.....	96	11	..	 1 mile.
Left peak of Jamaica Point Wharf house.....	105	01	..	 5/8 mile.
Chimney of house.....	132	50	..	 1 3/4 miles.
Near peak of house.....	157	00	..	 2 3/8 miles.
Nail in blaze in pin oak tree (10 inches diameter).....	186	09	50	 42.26 meters.
Nail in blaze in pine tree (11 inches diameter).....	212	30	40	 41.75 meters.
Nail in blaze in pine tree (12 inches diameter).....	245	18	30	 31.45 meters.
Nail in blaze in pine tree (12 inches diameter).....	267	08	30	 30.11 meters.
REFERENCE STATION.....	336	16	20	 4.95 meters.
Chimney of house.....	353	07	..	 1 mile.

GANDER.

General locality.—Southeastern shore of Choptank River $\frac{3}{4}$ mile southwest of entrance to Goose Creek, about $1\frac{1}{8}$ miles east-northeast of Oystershell Point, and about $1\frac{1}{8}$ miles south-southeast of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is in an uncultivated field on bank about 6 feet above high water, 19 yards east of edge of bank, 33 yards northeast of edge of bank, 33 yards southeast of edge of bank, and 155 yards west of two large cedar trees at a paling fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Chief" (S $9^{\circ} 44'$ W).....	0	00	00	 $\frac{5}{8}$ mile.
Chimney of house.....	28	22	..	 $1\frac{1}{4}$ miles.
Smoke pipe on wharf house.....	40	14	..	 $1\frac{1}{8}$ miles.
Chimney of house.....	50	00	..	 $4\frac{1}{2}$ miles.
"Cambridge Stand Pipe".....	62	46	50	 $5\frac{3}{4}$ miles.
Chimney outside of house.....	113	39	..	 $1\frac{1}{4}$ miles.
Right chimney of house.....	135	48	..	 $1\frac{1}{4}$ miles.
Near peak of Jamaica Point Wharf house....	147	14	..	 $1\frac{1}{8}$ miles.
Chimney of house.....	148	54	..	 $2\frac{3}{8}$ miles.
Chimney of house.....	164	24	..	 $3\frac{1}{4}$ miles.
Tangent of point.....	172	50	..	 $\frac{3}{4}$ mile.
Right end of roof of long barn.....	235	04	..	 $\frac{5}{8}$ mile.
Black walnut tree.....	282	36	..	 200 yards.
Chimney of house.....	344	59	..	 $\frac{1}{4}$ mile.

CHIEF.

General locality.—Southeast shore of Choptank River on a narrow neck of land between Choptank River and Indian Creek, about 1 mile east of Oystershell Point. (See Chart No. 35.)

Immediate locality.—Observed station is on a grass strip between Choptank River and Indian Creek about 2 feet above high water, 15 yards south of river shore, 11 yards north of creek shore, 20 yards southeast of river shore, and 25 yards southwest of river shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Shell" (S $85^{\circ} 11'$ W).....	0	00	00	 1 mile.
Smoke pipe on wharf house.....	0	42	..	 $\frac{3}{4}$ mile.
Nail in blaze in locust tree (3 inches diameter).....	13	37	10	 11.76 meters.
Right corner of railing on house.....	78	32	..	 2 miles.
Near peak of house.....	91	47	..	 $3\frac{5}{8}$ miles.
Right corner of square chimney.....	114	47	..	 $\frac{1}{2}$ mile.
Near corner of barn.....	144	05	..	 $\frac{1}{4}$ mile.
Nail in blaze in cedar tree (6 inches diameter).....	167	07	10	 22.07 meters.
Stack of cannery.....	208	56	20	 $\frac{3}{8}$ mile.
Peak of house between two chimneys.....	253	32	..	 $\frac{1}{4}$ mile.
Nail in blaze in cedar tree (8 inches diameter).....	348	04	50	 13.81 meters.
Near peak of cottage.....	358	38	..	 1 mile.

SHELL.

General locality.—Southeastern shore of Choptank River on Oyster Shell Point about $\frac{3}{4}$ mile south of Goose Point and $1\frac{1}{2}$ miles east-northeast of Chancellors Point. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 100 yards north of rail fence, 55 yards southwest of shore, 75 yards south of shore, 400 yards west of a wharf, 250 yards west by north of a small house near the shore, 50 yards west by north of corner of fence. Cement monument marking reference station is 2.27 meters N $83^{\circ} 07'$ W of observed station.

Marks.—Observed station is nail in cedar stub flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 5 inches above the surface of the ground.

References.—

	o	/	''	
"Whitehall" (S $41^{\circ} 55'$ W).....	0	00	00	$\frac{5}{8}$ mile.
Lone tree.....	29	12	..	225 yards.
"Cambridge Standpipe".....	35	39	00	$4\frac{1}{2}$ miles.
Right corner of square cupola.....	39	24	..	$1\frac{1}{2}$ miles.
REFERENCE STATION.....	54	57	50	2.27 meters.
Chimney of left end of house.....	83	10	..	$1\frac{1}{2}$ miles.
Near peak of large house.....	150	53	..	$1\frac{7}{8}$ miles.
Near peak of Jamaica Point Wharf house.....	158	17	..	$1\frac{1}{2}$ miles.
Right peak of building.....	177	29	..	$2\frac{5}{8}$ miles.
Chimney on house.....	205	20	..	$1\frac{3}{4}$ miles.
Smoke pipe on wharf house.....	221	13	..	$\frac{1}{4}$ mile.
Near peak of shed.....	265	40	..	150 yards.
Near peak of house.....	280	06	..	300 yards.

WHITEHALL.

General locality.—Southeastern shore of Choptank River about $\frac{5}{8}$ mile southwest of Oystershell Point, and $1\frac{1}{8}$ miles east of Chancellor Point. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point among water bushes about 12 yards south-southeast of shore, 13 yards south-southwest of shore, and 15 yards east-southeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Ferry" (S $55^{\circ} 08'$ W).....	0	00	00	$1\frac{1}{4}$ miles.
Chimney of house.....	10	50	..	$2\frac{3}{4}$ miles.
"Cambridge Stand Pipe".....	27	22	40	4 miles.
Right of square cupola.....	46	16	..	$1\frac{1}{2}$ miles.
Left chimney on long house.....	99	58	..	$1\frac{1}{4}$ miles.
Chimney outside near end of house.....	137	20	..	$1\frac{7}{8}$ miles.
Near peak of large building.....	144	31	..	$2\frac{3}{4}$ miles.
Front peak of Jamaica Point Wharf house.....	150	00	..	$2\frac{1}{2}$ miles.

FERRY.

General locality.—Southern shore of Choptank near east side of entrance to Hurst Creek about 2 $\frac{1}{2}$ miles east of Cambridge. (See Chart No. 35.)

Immediate locality.—Observed station is on a sand beach about on level with high water, 92 yards east-northeast of Hurst Creek, 1 yard southeast of shore, and 6 to 10 yards northwest to north of several low cedar trees. Cement monument marking reference station is 16.74 meters S $50^{\circ} 12'$ E of observed station.

Marks.—Observed station is nail in pine stub in center of 2-inch tile pipe with top of pipe 6 inches below surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"E. Cambridge Tall Stack" (N. 81° 21' W) ..	0	00	00	2½ miles.
"Hambrooks Bar Beacon"	24	05	10	3½ miles.
Near peak of large house with cupola	79	37	..	1 mile.
Near peak of barn cupola	99	22	..	2 miles.
Near peak of Jamaica Point Wharf house	116	23	..	3½ miles.
Nail in blaze in cedar tree (11 inches diameter)	193	07	00	6.82 meters.
REFERENCE STATION	211	09	00	16.74 meters.
Nail in blaze in cedar tree (8 inches diameter)	242	42	50	8.32 meters.
Nail in blaze in cedar tree (16 inches diameter)	279	49	00	9.76 meters.
Chimney of house	338	10	..	1¾ miles.

SHOAL.

General locality.—Southern shore of Choptank River near entrance to a small creek about 1 mile east-southeast of Cambridge 1½ miles west-southwest of Chancellors Point. (See Chart No. 35.)

Immediate locality.—Observed station is in woods on a point of land about 10 feet above high water, 50 yards east of edge of bank, 6 yards southwest of wire fence at edge of high land, 7 yards south of wire fence, 11 yards west of wire fence, 13 yards west-southwest of large double oak tree, and 90 yards east of a marsh point at a creek. Cement monument marking reference station is 6.08 meters S 23° 44' W of observed station.

Marks.—Observed station is center of tile pipe with top 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Cambridge" (N 46° 31' W)	0	00	00	1¾ miles.
Large chimney of house	25	55	..	3½ miles.
Spindle of barn cupola	61	31	..	1¾ miles.
Left chimney of house	84	09	..	2 miles.
Near peak of barn with cupola	106	11	..	1¾ miles.
Nail in blaze in large double oak tree	120	03	20	11.31 meters.
Nail in blaze in black walnut tree (8 inches diameter)	205	53	40	10.96 meters.
Nail in blaze in cedar tree (6 inches diameter)	224	26	30	8.05 meters.
REFERENCE STATION	250	15	40	6.08 meters.
Nail in blaze in black walnut tree (17 inches diameter)	304	19	20	3.19 meters.
Flagstaff on boathouse	358	43	..	2½ miles.

EAST CAMBRIDGE TALL STACK.

General locality.—Southern shore of Choptank River in the town of Cambridge on the east side of Cambridge Creek. (See Chart No. 35.)

Immediate locality.—Observed station is tall square brick smokestack at plant of Cambridge Manufacturing Company.

Marks.—Observed station is center of stack.

References.—None necessary.

EAST CAMBRIDGE SPIRE.

General locality.—Southern shore of Choptank River in town of Cambridge on the east side of Cambridge Creek and the south side of Maryland Avenue. (See Chart No. 35.)

NOTE.—This triangulation landmark was torn down before this publication was prepared and therefore it is not described, although its name and location are shown on Chart No. 35.

CAMBRIDGE STANDPIPE.

General locality.—Southwestern side of Choptank River in the town of Cambridge. (See Chart No. 35.)

Immediate locality.—Observed station is on standpipe on the north side of High Street near Pine Street.

Marks.—Observed station is center of cylindrical water standpipe with ornamental railing on top.

References.—None necessary.

CAMBRIDGE.

General locality.—Southern shore of Choptank River on a point about $\frac{3}{4}$ mile southeast of Hambrooks Bar Beacon and $\frac{1}{2}$ mile northwest of Cambridge steamer wharf. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 30 yards west of shore, 35 yards south of shore at cut, 40 yards southwest of shore, and 3 yards southwest of barbed-wire fence running northwest and southeast.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Command" (N 50° 20' W).....	0	00	00	$\frac{7}{8}$ mile.
"Hambrooks Bar Beacon".....	36	12	00	$\frac{3}{4}$ mile.
Southwest peak of Kirby Wharf house.....	58	27	..	$1\frac{3}{4}$ miles.
Chimney outside of south end of house.....	107	00	..	$1\frac{7}{8}$ miles.
Near one of four chimneys on large square house.....	133	26	..	$2\frac{1}{4}$ miles.
Right chimney of large house on Chancellors Point.....	146	27	..	$2\frac{3}{4}$ miles.
Weather vane on hotel.....	235	36	..	$\frac{1}{2}$ mile.
Chimney of house.....	328	03	..	$\frac{3}{4}$ mile.
Flagpole.....	354	09	..	$\frac{3}{4}$ mile.
Flagpole on boathouse.....	359	24	..	$\frac{3}{4}$ mile.

HAMBROOKS BAR BEACON.

General locality.—Southern side of Choptank River about $\frac{1}{4}$ mile offshore from point of land known as Hambrooks Bar, about 2 miles southeast of Howells Point and $1\frac{1}{2}$ miles northwest of Cambridge. (See Chart No. 35.)

Immediate locality.—Observed station is on a cylindrical foundation known as Hambrooks Bar Beacon.

Marks.—Observed station is center point of lantern on Hambrooks Bar Beacon.

References.—None necessary.

DICKS WATER TANK.

General locality.—Southern shore of Choptank River near Hambrooks Bar about $\frac{5}{8}$ mile southwest of Hambrooks Bar Beacon and $\frac{1}{2}$ mile west of extreme end of Hambrooks Bar. (See Chart No. 35.)

Immediate locality.—Observed station is on water tank.

Marks.—Observed station is spindle on top of water tank.

References.—None necessary.

COMMAND.

General locality.—Southern shore of Choptank River about $\frac{1}{2}$ mile west-southwest of Hambrooks Bar Beacon and about $1\frac{1}{2}$ miles northwest of Cambridge Wharf. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point inside of a fence line, about 2 feet above high water, 18 yards southeast of shore, 16 yards south of shore, 25 yards southwest of shore, and 150 yards northwest of a boathouse.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (N 49° 40' W).....	0	00	00	 6¾ miles.
Nail in blaze in fence post.....	5	33	30	 10.85 meters.
Near peak of large building.....	16	45	..	 2¼ miles.
Nail in blaze in fence post.....	65	08	20	 11.01 meters.
Left chimney of house with three dormer windows.....	68	28	..	 17½ miles.
Near peak of Kirby Wharf house.....	86	40	..	 1½ miles.
"Hambrooks Bar Beacon".....	121	17	50	 ½ mile.
Near peak of large house.....	153	10	..	 3 miles.
Flagstaff on boathouse.....	183	20	..	 150 yards.
"Dicks Water Tank".....	266	29	30	 ¾ mile.
Nail in blaze in fence post.....	328	25	40	 17.23 meters.
Left chimney of old house.....	331	53	..	 2¾ miles.
"Large Water Tank".....	347	03	10	 5 miles.

HOWARD.

General locality.—Southern shore of Choptank River, 2 miles southeast of Horn Point and about $\frac{1}{4}$ mile northwest of entrance to Jenkins Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on cultivated land on bluff about 12 feet above high water, 25 yards southwest of edge of bluff, 30 yards south of edge of bluff, 35 yards west of edge of bluff, 45 yards west-northwest of corner of fence dividing field from marsh, and 65 yards northeast of the south one of two small poplar trees in field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (N 36° 14' W).....	0	00	00	 6 miles.
Near peak of barn.....	30	20	..	 3½ miles.
"Black Beacon".....	32	16	50	 2½ miles.
Red Beacon.....	34	11	30	 2¾ miles.
Near peak of low house in trees.....	79	52	..	 3¼ miles.
Near peak of Kirby Wharf house.....	90	53	..	 3 miles.
"Dicks Water Tank".....	109	57	40	 1½ miles.
Left chimney of house.....	115	00	..	 1 mile.
Nail in blaze in locust tree (8 inches diameter).....	125	51	50	 37.49 meters.
Nail in blaze in locust tree.....	144	34	50	 45.66 meters.
Nail in blaze in locust tree.....	188	22	40	 63.83 meters.
Near peak of barn.....	245	03	..	 ¼ mile.
Right peak of house.....	317	02	..	 ¼ mile.
Right peak of old house.....	351	02	..	 1½ miles.

TOOT.

General locality.—Southern shore of Choptank River on Horn Point about $1\frac{1}{4}$ miles west of Howells Point, and at eastern side of entrance to Lecomptes Bay. (See Chart No. 35.)

Immediate locality.—Observed station is in woods about 7 feet above high water, 15 yards south of shore, 13 yards southwest of shore, and 20 yards west of shore, and near but not on highest point of ground. Cement monument marking reference station is 12.38 meters S $33^{\circ} 34'$ W of observed station.

Marks.—Observed station is nail in center of stub in 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of the ground.

References.—

	°	'	"	
"Choptank River Light" (N $34^{\circ} 15'$ W).....	0	00	00	 $4\frac{1}{8}$ miles.
East peak of large barn.....	57	02	..	 $2\frac{3}{4}$ miles.
Large chimney of house.....	68	24	..	 $2\frac{1}{2}$ miles.
Red Beacon.....	71	28	00	 2 miles.
"Black Beacon".....	73	17	30	 $1\frac{3}{4}$ miles.
Near peak of house.....	88	38	..	 2 miles.
Nail in blaze in elm tree.....	147	42	40	 5.48 meters.
Nail in blaze in oak tree (24 inches diameter). 200	47	10	..	 4.70 meters.
Nail in blaze in oak tree (20 inches diameter). 246	58	10	..	 16.89 meters.
REFERENCE STATION.....	247	49	00	 12.38 meters.
Chimney of house.....	293	21	..	 $1\frac{1}{2}$ miles.
Chimney outside of house.....	331	19	..	 $1\frac{3}{4}$ miles.
"Large Water Tank".....	344	41	10	 $2\frac{1}{2}$ miles.
Near corner of boathouse.....	351	52	..	 $2\frac{1}{2}$ miles.

LECOMPTÉ.

General locality.—Southern shore of Choptank River on southwestern side of Lecomptes Bay about $1\frac{1}{2}$ miles west-southwest of Horn Point, $\frac{3}{4}$ mile northwest of Travers Wharf, and $\frac{1}{4}$ mile southwest of mouth of Lecomptes Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 18 yards west of point of shore, 14 yards south-southeast of shore, 5 yards east-southeast of turn in shore at beach, 7 yards northeast of a pool, 10 yards northwest of cut in shore, and 115 yards southeast of near one of two large cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Grubin" (N $56^{\circ} 00'$ E).....	0	00	00	 $3\frac{1}{8}$ miles.
"Black Beacon".....	0	12	10	 $2\frac{7}{8}$ miles.
Barn cupola.....	9	10	..	.....
North peak of wharf house.....	69	02	..	 $\frac{1}{4}$ mile.
North peak of house.....	106	43	..	 $\frac{3}{4}$ mile.
Left one of two large cedar trees.....	248	12	..	 117 yards.
Spindle on barn cupola.....	280	48	..	 $1\frac{1}{2}$ mile.
Chimney outside of house.....	303	44	..	 $\frac{3}{4}$ mile.
Red Beacon.....	358	07	20	 $3\frac{1}{8}$ miles.

LARGE WATER TANK.

General locality.—Southwestern shore of Choptank River at Castle Haven, about $2\frac{1}{8}$ miles south of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is on water tank on high steel tower near barns at Castle Haven.

Marks.—Observed station is center point of windmill on water tank.

References.—None necessary.

CASTLE.

General locality.—Southern shore of Choptank River on Castlehaven Point on north side of Castlehaven Creek about 2 miles south-southwest of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is on a narrow neck of land, about 25 yards south-southwest of shore of Choptank River, 20 yards north of shore of cove, 22 yards west of bathhouse, and 100 yards east-northeast of three poplar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (N 25° 41' W).....	0	00	00	 2 miles.
Right corner of house near Bachelor Point..	19	27	..	 3 miles.
Left corner of bathhouse.....	95	31	20	 21.42 meters.
Near corner of bathhouse.....	109	32	20	 19.83 meters.
Near peak of house.....	122	56	..	 3 miles.
Right peak of boathouse at Castlehaven				
Wharf.....	215	04	..	 ½ mile.
Right corner of chimney of brick house....	254	18	..	 ½ mile.

JERE.

General locality.—Eastern side of Chesapeake Bay on Sharps Island, about 1½ miles south-southeast of Sharps Island Light. (See Chart No. 36.)

Immediate locality.—Observed station is on hard ground about 7 feet above high water, 95 yards south-southeast of old hotel building, 95 yards west-southwest of shore, 150 yards southwest of a point and in such a position that Sharps Island Light shows to the right of the old hotel building.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (N 24° 06' W).....	0	00	00	 1½ miles.
Church cupola.....	46	35	50	 5¼ miles.
Chimney on left end of roof of large house....	47	44	..	 5 miles.
Chimney of large house.....	104	25	..	 4¼ miles.
Large chimney of large house.....	115	46	..	 4¾ miles.
Chimney on right end of large house.....	142	21	..	 5½ miles.
Near corner of house.....	346	59	..	 95 yards.

SHARPS ISLAND LIGHT.

General locality.—Eastern side of Chesapeake Bay off entrance to Choptank River, about 1 mile north-northwest of Sharps Island and 2⅝ miles southwest of Blackwalnut Point. (See Chart No. 36.)

Immediate locality.—Observed station is on structure with a cylindrical foundation known as Sharps Island Light.

Marks.—Observed station is center point of lantern on Sharps Island Light.

References.—

	°	'	"	
"Black" (N 43° 36' E).....	0	00	00	 2¾ miles.

BLACK.

General locality.—Eastern shore of Chesapeake Bay on Blackwalnut Point at north side of entrance to Choptank River, about 2¾ miles northeast of Sharps Island Light. (See Charts No. 36.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 35 yards east-northeast of edge of bank, 45 yards west of edge of bank, 65 yards northwest of edge of bank, and 130 yards south of a lone apple tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (S 43° 37' W)	0	00	00	2¾ miles.
Near peak of old house	123	10	..	½ mile.
Lone apple tree	133	16	..	131 yards.
Chimney of house among trees	145	38	..	1¾ miles.
Right chimney of house near water	163	31	..	1 mile.
Right chimney of large house	211	27	..	7 miles.
"Choptank River Light"	232	11	30	8½ miles.
Near peak of barn	253	22	..	6 miles.
Left chimney of house	270	12	..	3¾ miles.
Chimney outside left end of house	283	35	..	7 miles.
Near peak of old hotel building on Sharps Island	337	47	..	3½ miles.

BAR.

General locality.—Western shore of entrance to Harris Creek on Upper Bar Neck Point, about 1¾ miles north-northeast of Blackwalnut Point and 1½ miles south-southeast of Tilghman Island Wharf. (See Progress map.)

Immediate locality.—Observed station is in cultivated field about 6 feet above high water, 3 yards west of edge of bank and 60 yards north of line of trees at edge of marsh. Cement monument marking reference station is 45.81 meters S 83° 00' W of observed station nearly on line to large lone persimmon tree 15 inches diameter.

Marks.—Observed station is center of 4-inch tile pipe with top about 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Large Water Tank" (S 61° 46' E)	0	00	00	9¼ miles.
Nail in blaze in oak stump	63	18	00	51.17 meters.
Nail in blaze in wild cherry tree	78	58	40	46.66 meters.
Nail in blaze in cedar tree	88	35	30	47.69 meters.
Nail in blaze in lone persimmon tree	144	33	10	49.48 meters.
REFERENCE STATION	144	46	00	45.81 meters.
Right chimney of first house to right of woods	205	39	..	¾ mile.
Schoolhouse cupola	213	11	40	1¾ miles.
Stack of cannery	216	19	..	1½ miles.
Stack of cannery	227	10	..	1¾ miles.
Right chimney of house showing over woods	239	07	..	2½ miles.
Neavitt schoolhouse cupola	269	25	..	3¾ miles.
Chimney of house	276	58	..	2½ miles.

CHANGE (1910).

General locality.—Eastern shore of Harris Creek on Change Point, about 1½ miles east of Knapps Narrows. (See Progress map.)

Immediate locality.—Observed station is in cultivated field about 8 feet above high water, 45 yards north-northeast of extreme end of point, 55 yards northwest of edge of bank, 35 yards east of edge of bank, 70 yards southeast by south of corner of wire fence, and 70 yards south-southwest of wire fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Nelson 3" (S 53° 21' E).....	0	00	00	1½ miles.
"Windmill".....	5	53	50	9¼ miles.
Near peak of house.....	25	43	..	7 miles.
Chimney of house.....	89	04	..	2½ miles.
Near peak of house.....	117	29	..	2½ miles.
Near peak of storehouse on Tilghman Island				
Wharf.....	123	16	..	1¾ miles.
Near peak of house.....	131	01	..	2½ miles.
Near chimney of brick house.....	210	58	..	2½ miles.
Right chimney of house.....	278	54	..	¼ mile.
Near peak of house.....	307	44	..	⅞ mile.

CHEF.

General locality.—Eastern shore of Chesapeake Bay on Cook Point, at southern side of entrance to Choptank River, about 4 miles east of Sharps Island. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is in cultivated field about 8 feet above high water, 30 yards inside of fringe of trees parallel with shore, 45 yards southwest of eastern end of fringe of trees, 70 yards east of western end of fringe of trees, and 190 yards northwest by north of gate in fence running east and west.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (N 84° or' W).....	0	00	00	4½ miles.
Nail in blaze in wild cherry tree (4 inches diameter).....	18	41	10	31.43 meters.
Nail in blaze in locust tree (5 inches diameter).....	46	09	20	28.53 meters.
Large chimney of house.....	51	57	..	4¾ miles.
Nail in blaze in locust tree (5 inches diameter).....	79	02	50	29.94 meters.
Left peak of house.....	81	21	..	5 miles.
Near peak of barn.....	98	22	..	7½ miles.
Nail in blaze in locust tree (6 inches diameter).....	99	50	30	43.16 meters.
Near chimney on largest building in group..	127	24	..	6 miles.
Left end of house.....	150	48	30	7½ miles.
"Choptank River Light".....	158	02	10	5½ miles.
Lone persimmon tree.....	165	47	..	231 yards.
"Large water tank".....	177	43	10	6¾ miles.
Right chimney outside house.....	194	02	..	2¼ miles.
Chimney on right one of two houses.....	222	37	..	¼ mile.
Right peak of barn.....	251	19	..	¼ mile.
Right peak of hotel on Sharps Island.....	341	27	..	4 miles.

COOK POINT WINDMILL.

General locality.—Eastern shore of Chesapeake Bay on Cook Point, between Tripps Bay and Cook Point Cove, about 1¼ miles southeast of end of point. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is on windmill over smaller and west one of two water tanks west of a barn on Cook Point farm.

Marks.—Observed station is center of windmill over smaller tank.

References.—None necessary.

BRANNOCK.

General locality.—Eastern shore of Chesapeake Bay between Choptank River and Little Choptank River, on the southern shore of Brannock Bay, about 7 miles southeast of Sharps Island Light. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is on high land about 8 feet above high water, 11 yards south of shore, 7 yards south of edge of bluff, 8 yards north of rail fence on far side of county road, 50 yards east of bend where road leaves shore and runs toward farmhouse and 150 yards northeast of a farmhouse.

Marks.—Observed station is center point of triangle on standard cement monument projecting about inches above surface of ground. Subsurface mark is 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
Sharps Island Light (N 54° 34' W).....	0	00	00	 7 miles.
Near peak of house on Cook Point.....	38	18	..	 3½ miles.
"Cook Point windmill".....	45	33	30	 2½ miles.
Right chimney of house in trees.....	83	15	..	 2 miles.
Between two chimneys on large part of house.....	104	31	..	 1 mile.
Outside chimney on near end of house.....	108	06	..	 1 mile.
Center one of three chimneys of house.....	142	03	..	 1 mile.
Tangent of right end of barn roof.....	150	49	..	 1 mile.
Center one of three chimneys on house.....	163	16	..	 ¾ mile.
Right peak of house.....	203	34	..	 2 miles.
Left chimney of 1½-story house across creek.....	210	47	..	 2 miles.
Near peak of barn.....	285	11	..	 ¾ mile.
Tangent of Mills Point.....	343	43	..	 ¾ mile.
Tangent of left end of Sharps Island Hotel.....	352	12	..	 5½ miles.

ROBINS.

General locality.—Eastern shore of Chesapeake Bay on Hills Point, at northeast side of entrance to Little Choptank River, about 6 miles southeast of Sharps Island Light. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is in cultivated field about 8 feet above high water, 40 yards northeast by north of edge of bluff, 45 yards east by north of point of bluff, 65 yards south by east of edge of bluff in range with Sharps Island Light, and 140 yards north by west of wire fence at bluff.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Sharps Island Light" (N 34° 11' W).....	0	00	00	 6 miles.
Nail in blaze in cedar tree (8 inches diameter).....	5	43	20	 37.11 meters.
Left chimney of house.....	76	25	..	 ½ mile.
Near peak of barn.....	87	14	..	 ½ mile.
Tallest chimney of house.....	91	22	..	 ¾ mile.
Near peak of barn.....	222	52	..	 5¼ miles.
Tangent of end of woods on Taylor Island.....	229	14	..	 5¼ miles.
Chimney of house on James Point.....	247	10	..	 3½ miles.
Tangent of James Point.....	248	00	..	 3 miles.
Nail in blaze in cedar tree (8 inches diameter).....	336	32	30	 28.22 meters.
Nail in blaze in cedar tree (8 inches diameter).....	353	18	50	 30.90 meters.
Tangent of right side of hotel on Sharps Island.....	356	39	..	 4½ miles.

RAGGED POINT 3.

General locality.—Northern shore of Little Choptank River on Ragged Island, about 3 miles east of the northeast end of James Island. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is on small marsh point about 1 foot above high water, 3 yards east of shore, 5 yards northwest of shore, 9 yards north of extreme end of point, and 100 yards east of a small marsh island. Cement monument marking reference station is 27.27 meters N $31^{\circ} 42'$ E of observed station. Tile pipe set in cement marking old reference station is 21.75 meters N $30^{\circ} 42'$ E of observed station.

Marks.—Observed station is nail in cedar stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Old reference station is tile pipe set in cement projecting 2 inches above surface of ground.

References.—

"Hudson" (N $76^{\circ} 00'$ E).....	0	00	00	.....	1 $\frac{3}{4}$ miles.
Near peak of barn.....	66	19	..	.....	2 miles.
Near peak of barn.....	70	55	..	.....	2 miles.
Near chimney of house.....	72	00	..	.....	2 miles.
Right chimney of house.....	75	31	..	.....	2 $\frac{1}{4}$ miles.
Near peak of barn.....	109	39	..	.....	2 $\frac{1}{2}$ miles.
Near peak of barn.....	116	30	..	.....	2 $\frac{1}{4}$ miles.
Left chimney of house on Hooper Point.....	117	34	..	.....	2 $\frac{1}{4}$ miles.
Near peak of barn.....	129	50	..	.....	2 $\frac{1}{2}$ miles.
Near peak of barn on Hills Point.....	247	47	..	.....	2 $\frac{3}{4}$ miles.
OLD REFERENCE STATION (TILE PIPE).....	314	41	40	.....	21.75 meters.
NEW REFERENCE STATION (CEMENT MONUMENT).....	315	47	40	.....	27.27 meters.

TORREY.

General locality.—Eastern shore of Slaughter Creek, about 1 mile southeast of Hooper Point, and $\frac{1}{4}$ mile southwest of entrance to Parsons Creek. (See Charts Nos. 36, 37, and 38.)

Immediate locality.—Observed station is on hard marsh about 1 foot above high water, 90 yards east northeast of shore, 250 yards south of shore, 50 yards west of young pine thicket, and near several small pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

"Maryland" (S $22^{\circ} 07'$ W).....	0	00	00	.....	$\frac{3}{4}$ mile.
Peak of barn.....	0	25	..	.....	1 mile.
Cupola on barn.....	9	37	..	.....	1 $\frac{3}{8}$ miles.
Right chimney of house.....	22	48	..	.....	1 $\frac{5}{8}$ miles.
Left chimney of house.....	47	32	..	.....	$\frac{3}{4}$ mile.
Right end of barn.....	79	07	..	.....	$\frac{5}{8}$ mile.
Left chimney of house.....	82	24	..	.....	$\frac{5}{8}$ mile.
Center of old windmill.....	97	14	..	.....	1 mile.
Left chimney of house on Hooper Point.....	109	58	..	.....	1 mile.
Near peak of barn.....	174	14	..	.....	4 miles.
Nail in blaze in pine tree (5 inches diameter).....	265	24	40	.....	9.60 meters.
Nail in blaze in pine tree (6 inches diameter).....	287	08	10	.....	11.86 meters.
Nail in blaze in pine tree (4 inches diameter).....	292	06	00	.....	17.90 meters.

MARYLAND.

General locality.—Eastern side of Slaughter Creek, about $1\frac{1}{4}$ miles northeast of Slaughter Creek Bridge, and $\frac{1}{4}$ mile southeast of shore. (See Charts Nos. 36, 37, and 38.)

Immediate locality.—Observed station is in a cultivated field about 35 yards northeast of fence between fields, 105 yards west-northwest of road from Madison to Taylor Island, 115 yards northwest of junction of fences at road, and 130 yards west-northwest of house on opposite side of road.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Noble" (S 29° 28' W)	0	00	00	 $\frac{3}{4}$ mile.
Near peak of canning house	2	03	..	 $1\frac{1}{8}$ miles.
Spindle on cupola on barn	12	10	..	 $\frac{3}{4}$ mile.
Left side of barn	37	09	..	 $\frac{1}{4}$ mile.
Right chimney of house	51	14	..	 $\frac{1}{4}$ mile.
Near chimney of large house	99	33	..	 $\frac{5}{8}$ mile.
Near peak of large barn	126	38	..	 $\frac{1}{8}$ mile.
Left chimney of house	163	02	..	 $\frac{1}{2}$ mile.
Chimney on near end of house	212	46	..	 $\frac{3}{4}$ mile.
Center of front door of house on opposite side of road	269	34	..	 130 yards.
Near peak of barn	353	18	..	 1 mile.

WHITEWASH.

General locality.—Western shore of Slaughter Creek, about $1\frac{1}{4}$ miles north of Slaughter Creek Bridge, and $1\frac{1}{2}$ miles southwest of entrance to Parsons Creek. (See Charts Nos. 36, 37, and 38.)

Immediate locality.—Observed station is on marsh about on level with high water, about 25 yards west-northwest of shore, 50 yards north-northwest of shore, 60 yards southwest of shore, 50 yards east-southeast of wire fence, and 300 yards south of farm house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Moore" (N 23° 17' E)	0	00	00	 $\frac{5}{8}$ mile.
Near chimney of house	28	33	..	 $1\frac{1}{8}$ miles.
Left chimney of house	42	53	..	 $\frac{5}{8}$ mile.
Near peak of barn	51	57	..	 $\frac{3}{4}$ mile.
Near gable of house	92	49	..	 $\frac{5}{8}$ mile.
Left chimney of house	115	15	..	 $\frac{3}{8}$ mile.
Cupola on barn	155	17	..	 $\frac{3}{4}$ mile.
Center of canning house ventilators	161	17	..	 $1\frac{1}{4}$ miles.
Center of draw of Slaughter Creek Bridge	169	48	..	 $1\frac{1}{4}$ miles.
Near peak of large building	177	46	..	 $1\frac{3}{8}$ miles.
Near peak of barn	330	08	..	 250 yards.
Right chimney of house	335	23	..	 $\frac{5}{8}$ mile.
Near peak of barn	351	15	..	 $\frac{5}{8}$ mile.

MOORE.

General locality.—Western shore of Slaughter Creek, about $\frac{5}{8}$ mile south of Hooper Point and $\frac{7}{8}$ mile west-southwest of entrance to Parsons Creek. (See Charts Nos. 36, 37, and 38.)

Immediate locality.—Observed station is on sand and shell land near edge of marsh about 1 foot above high water, 11 yards west of shore, 25 yards north of shore, 130 yards south of shore, 140 yards east of near corner of large barn, and 200 yards west-southwest of end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Veith" (N 9° 21' W)	0	00	00	 $\frac{5}{8}$ mile.
Right chimney of house	68	23	..	 $1\frac{1}{2}$ miles.
Near peak of barn	74	39	..	 $1\frac{1}{2}$ miles.
Near peak of barn	149	02	..	 $\frac{3}{4}$ mile.
Left chimney of house	168	10	..	 $\frac{7}{8}$ mile.
Left chimney of house	189	25	..	 $\frac{3}{4}$ mile.
Center of draw of Slaughter Creek bridge	205	46	..	 $1\frac{1}{8}$ miles.
Near corner of large barn	275	24	..	 140 yards.
Left edge of house	296	55	..	 $\frac{1}{8}$ mile.
Near peak of barn	333	27	..	 $\frac{3}{4}$ mile.
Right chimney of house on Hooper Point	343	01	..	 $\frac{5}{8}$ mile.

VEITH.

General locality.—Southern shore of Little Choptank River on Hooper Point at western side of entrance to Slaughter Creek about 2 miles south of Ragged Point. (See Charts Nos. 36, 37, and 38.)

Immediate locality.—Observed station is on a marsh about 1 foot above high water, 25 yards west of shore, 30 yards south of shore, 50 yards northwest of shore, 6 yards east of edge of larger pond in marsh, 25 yards north of edge of smaller pond in marsh, and 125 yards east of an orchard.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ragged Point 3" (N 7° 23' E)	0	00	00	 2 miles.
Left chimney of house	23	31	..	 $3\frac{1}{8}$ miles.
Tangent of Susquehanna Point	48	15	..	 $2\frac{1}{4}$ miles.
Right chimney of house	75	11	..	 $1\frac{1}{4}$ miles.
Near peak of barn	172	27	..	 $\frac{1}{2}$ mile.
Left chimney of house	173	28	..	 $\frac{1}{2}$ mile.
Near chimney of house	208	22	..	 $\frac{1}{2}$ mile.
Center of old windmill	221	47	..	 $\frac{1}{2}$ mile.
Near chimney of house on Hooper Point	272	12	..	 $\frac{1}{8}$ mile.
Near peak of barn	353	05	..	 $3\frac{1}{8}$ miles.

CAN.

General locality.—Southern shore of Little Choptank River on a point about 2 miles east of the southeastern end of James Island, and 1 mile west of entrance to Slaughter Creek. (See Charts No. 36, 37, and 38.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 9 yards southwest of shore, 17 yards southeast of end of point, 20 yards east of shore, and 180 yards north-northwest of a house among trees. Cement monument marking reference station is 9.25 meters S 6° 58' E of observed station.

Survey of Oyster Bars, Dorchester County, Md.

Marks.—Observed station is center of 4 inch tile pipe set in cement and projecting 2 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Skid" (N 89° 23' W).....	0	00	00	2 miles.
Chimney on near end of old house.....	7	40	..	2 miles.
Chimney on end of small addition to house..	38	23	..	2¼ miles.
Near peak of barn on Hills Point.....	83	31	..	4½ miles.
Near peak of house.....	106	27	..	4¾ miles.
Left chimney of house.....	132	18	..	3¾ miles.
Middle chimney of house.....	164	57	..	3¾ miles.
Left chimney of house.....	210	48	..	180 yards.
REFERENCE STATION.....	262	25	00	9.25 meters.
Near peak of large barn.....	328	01	..	1¼ miles.
Left chimney of large house on north end of Taylor Island.....	345	56	..	1¾ miles.
Tangent to north end of Taylor Island.....	356	20	..	1¾ miles.

SKID.

General locality.—Eastern shore of Chesapeake Bay, on extreme southern end of James Island, about 8½ miles north-northeast of Cove Point Light and 4 miles southwest of Ragged Point. (See Charts Nos. 36, 37, and 38.)

Immediate locality.—Observed station is on land about 5 feet above high water, 33 yards west of shore, 22 yards northeast of shore, and 60 yards northwest of extreme end of point. Four-inch tile pipe marking old reference station is 148.83 meters N 9° 35' W of observed station and cement monument marking new reference station is 58.70 meters N 9° 59' W of observed station.

Marks.—Observed station is center of 4-inch tile pipe with top 6 inches below surface of ground. Subsurface mark is center of 4-inch tile pipe buried with top 2 inches below base of surface pipe. Old reference station is nail in center of 4-inch tile pipe filled with and set in cement projecting 3 inches above surface of ground. New reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Can" (S 89° 25' E).....	0	00	00	2 miles.
Near peak of barn with metal roof.....	24	25	..	¾ mile.
Left chimney of house.....	28	22	..	¾ mile.
Left chimney of house.....	39	31	..	1 mile.
Near peak of house.....	67	27	..	1½ miles.
Right chimney of house.....	85	19	..	¾ mile.
Tangent of north end of Taylor Island.....	107	44	..	¼ mile.
Tangent of end of woods.....	224	23	..	¾ mile.
Left chimney of large house.....	259	49	..	¼ mile.
OLD REFERENCE STATION (TILE PIPE).....	259	49	10	148.83 meters.
NEW REFERENCE STATION (MONUMENT).....	259	25	40	58.70 meters.
"Rede" (Right chimney of house).....	274	23	40	¾ mile.
Right tangent of woods on Casons Point....	333	28	..	5½ miles.
Chimney on near end of house on Hooper Point.....	355	32	..	2¾ miles.

REDE.

General locality.—Southwestern shore of Little Choptank River on James Island about 3 miles west-northwest of Hooper Point. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is on two-story house on the east side of James Island and on the south side of Oyster Creek at its mouth.

Marks.—Eastern chimney of two-story house.

References.—None necessary.

JAMES.

General locality.—Eastern side of Chesapeake Bay on northeast end of James Island at south side of entrance to Little Choptank River. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 8 yards west of shore, 11 yards northwest of shore, 85 yards south of shore, and 75 yards east of pine woods. Cement monument marking reference station is 19.48 meters S $84^{\circ} 17'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument.

References.—

	"	'	"	
"Robins" (N $23^{\circ} 14'$ E).....	0	00	00	 2¾ miles.
Near peak of house.....	12	37	..	 3½ miles.
Chimney on near end of house.....	48	42	..	 3¼ miles.
Near peak of barn.....	89	01	..	 4¼ miles.
Near chimney of house on Hooper Point....	100	36	..	 3 miles.
Left peak of long barn.....	107	05	..	 3½ miles.
Near peak of barn.....	146	09	..	 2½ miles.
REFERENCE STATION.....	241	03	00	 19.48 meters.
"Sharps Island Light".....	320	02	40	 7¾ miles.
Right edge of old hotel on Sharps Island....	321	43	..	 6¼ miles.
Left tangent of woods on Cook Point.....	357	29	..	 7 miles.

NELSON 3.

General locality.—Northern shore of Choptank River on Nelson Island, between the entrance to Harris and Broad Creeks. (See Progress map.)

Immediate locality.—Observed station is on southwest point of island on marsh about 2 feet above high water, 28 yards north-northeast of extreme end of point, 45 yards northwest of edge of marsh, and 14 yards east of marsh. Cement monument marking reference station is 32.27 meters N $32^{\circ} 05'$ E of observed station.

Marks.—Observed station is center of nail in 3-inch square stub in tile pipe flush with ground. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	"	'	"	
"Choptank River Light" (S $56^{\circ} 09'$ E).....	0	00	00	 5½ miles.
"Large Water Tank".....	10	09	50	 7½ miles.
Right chimney of house.....	31	48	..	 7 miles.
Near chimney outside of house.....	45	44	..	 5¾ miles.
Near peak of barn on Cook Point.....	67	40	..	 5¼ miles.
Left peak of hotel on Sharps Island.....	98	03	..	 7¾ miles.
"Sharps Island Light".....	109	04	20	 7¾ miles.
Chimney of house.....	137	36	..	 4 miles.
Stack of cannery at Tilghman Island.....	153	43	..	 3½ miles.
Windmill at Tilghman Island.....	155	12	..	 3½ miles.
Chimney of house on Change Point.....	185	37	..	 1¾ miles.
Left peak of house.....	197	50	..	 1½ miles.
Chimney of house.....	254	10	..	 2¾ miles.
"St. Michaels Church Spire".....	259	55	10	 6¼ miles.
REFERENCE STATION.....	268	13	20	 32.27 meters.
Left peak of building.....	293	43	..	 2½ miles.
Near peak of house with three chimneys.....	335	18	..	 3 miles.

ANNETTE.

General locality.—Western shore of Broad Creek about $\frac{3}{4}$ mile north of Nelson Point, and on south side of entrance to Balls Creek. (See Progress map.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, and 4 yards west of shore. Cement monument marking reference station is 9.39 meters N $75^{\circ} 59'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 3 inches above surface of ground.

References.—

	°	'	"	
"Myrtle" (N $15^{\circ} 29'$ E).....	0	00	00	 $\frac{5}{8}$ mile.
South chimney of house	18	39	..	 $3\frac{3}{4}$ miles.
South chimney of house	29	53	..	 $3\frac{3}{4}$ miles.
South gable of barn	35	01	..	 $3\frac{1}{2}$ miles.
Chimney of house	36	35	..	 $3\frac{1}{2}$ miles.
South gable of barn	72	54	..	 2 miles.
West chimney of house	102	19	..	 $3\frac{3}{4}$ miles.
"Choptank River Light"	116	34	40	 $6\frac{1}{4}$ miles.
Water tank at Castle Haven	123	54	..	 $8\frac{1}{4}$ miles.
North gable of barn on Todd Point	148	31	..	 $6\frac{1}{2}$ miles.
Nail in blaze in cedar tree (10 inches diameter).....	187	26	00	 11.37 meters.
Nail in blaze in cedar tree (10 inches diameter).....	235	06	30	 16.81 meters.
REFERENCE STATION	268	29	40	 9.39 meters.

PEARY.

General locality.—Eastern shore of Broad Creek about 1 mile north of entrance to Broad Creek, $1\frac{3}{8}$ miles north of Royston Island and $1\frac{3}{4}$ miles east-northeast of Nelson Point. (See Progress map.)

Immediate locality.—Observed station is on wooded shore about 6 feet above high water, 3 yards east of vertical bank which is washed by high water 100 yards south of north end of pine woods. Cement monument marking reference station is 20.93 meters N $43^{\circ} 30'$ E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Roys" (S $17^{\circ} 35'$ E).....	0	00	00	 $1\frac{1}{2}$ miles.
Left tangent of Cook Point	44	53	..	 $6\frac{1}{4}$ miles.
Right tangent of Nelson Point	96	09	..	 $1\frac{3}{4}$ miles.
East chimney of house	117	03	..	 2 miles.
East gable of Parlett house	131	52	..	 $2\frac{3}{4}$ miles.
South gable of barn	168	59	..	 $1\frac{7}{8}$ miles.
Nail in blaze in pine tree (15 inches diameter).....	233	25	40	 17.49 meters.
REFERENCE STATION	241	04	50	 20.93 meters.
Nail in blaze in pine tree (15 inches diameter).....	307	35	10	 15.45 meters.

IRISH.

General locality.—Northeastern shore of Choptank River on west side of entrance to Irish Creek about $\frac{3}{4}$ mile northeast of Royston Island. (See Progress map.)

Immediate locality.—Observed station is in cultivated land, about 5 feet above high water, 13 yards east-northeast of edge of bank, 5 yards north of foot of bank, 4 yards north of a cedar tree, 10 yards west of a small cedar tree at west end of line of locust trees, and 23 yards east-southeast of rounded point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Pont" (N 13° 04' E).....	0	00	00	 ½ mile.
Near peak of building.....	25	49	..	 1¼ miles.
Nail in blaze in locust tree (2 inches diameter).....	68	52	50	 16.33 meters.
Left peak of house.....	98	15	..	 ⅝ mile.
Left peak of barn.....	123	13	..	 1 mile.
Nail in blaze in cedar tree (7 inches diameter).....	152	52	10	 4.29 meters.
Near peak of house.....	185	06	..	 5 miles.
Nail in blaze in cedar tree (2 inches diameter).....	206	33	40	 6.24 meters.
"Sharps Island Light".....	230	10	20	 9 miles.
Near peak of house.....	291	12	..	 3¾ miles.
Near peak of barn.....	348	54	..	 300 yards.

ROYS.

General locality.—Northeastern side of Choptank River on southern end of Royston Island, about ½ mile southwest of entrance to Irish Creek. (See Progress map.)

Immediate locality.—Observed station is about 5 feet above high water, 15 yards north of shore, 25 yards east of shore, and 25 yards northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Choptank River Light" (S 44° 37' E).....	0	00	00	 3½ miles.
"Large Water Tank".....	9	09	00	 5½ miles.
Peak of large barn.....	49	44	..	 4½ miles.
Right peak of barn.....	71	08	..	 5¼ miles.
Windmill.....	71	18	..	 5¾ miles.
"Sharps Island Light".....	109	16	30	 8¾ miles.
Church Spire.....	134	43	..	 6 miles.
Church Spire.....	134	47	..	 6 miles.
Large spire.....	134	57	..	 6 miles.
Windmill.....	146	07	..	 5¾ miles.
Chimney of house.....	170	03	..	 3 miles.
Near peak of large barn.....	200	28	..	 3½ miles.
Nail in blaze in oak tree (3 inches diameter).....	215	43	10	 10.64 meters.
Nail in blaze in oak tree (3 inches diameter).....	281	24	20	 6.22 meters.
Nail in blaze in cedar tree (5 inches diameter).....	358	28	40	 15.92 meters.

CREEK.

General locality.—Northeastern shore of Choptank River on east side of entrance to Irish Creek, about ⅝ mile east-northeast of Royston Island. (See Progress map.)

Immediate locality.—Observed station on marsh point about 1 foot above high water, 11 yards south-east of shore, 11 yards east of shore, 17 yards north-northeast of shore, and 14 yards south of cut in shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Dot" (S 17° 34' W).....	0	00	00	 4½ miles.
Right corner of house.....	118	45	..	 ¾ mile.
Right corner of house.....	146	12	..	 1¼ miles.
Left peak of house.....	184	09	..	 1¾ miles.
Left corner of large chimney.....	230	02	..	 ¾ mile.
Near peak of large building.....	354	09	..	 5¾ miles.

CORNER (CHOPTANK RIVER).

General locality.—Southern shore of Choptank River on east side of entrance to Chapel Creek, about 2 miles southeast of Todd Point, and 3 miles south-southwest of Choptank River Light. (See Chart No. 37.)

Immediate locality.—Observed station is on grassy land about 3 feet above high water, 30 yards east of shore, 30 yards south of shore, 35 yards southeast of extreme end of point, and west of small clump of small pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Dot" (N 58° 43' W).....	0	00	00	 2½ miles.
Nail in blaze in holly tree (14 inches diameter).....	35	13	40	 13.81 meters.
"Choptank River Light".....	75	55	20	 3 miles.
Nail in blaze in pine tree (4 inches diameter).....	105	03	00	 3.57 meters.
Right corner of new house.....	108	42	..	 ¼ mile.
Nail in blaze in pine tree (5 inches diameter).....	187	20	10	 8.21 meters.
Near peak of 2¼-story house.....	308	25	..	 ¾ mile.
Chimney outside right end of house.....	340	33	..	 2 miles.
Chimney outside near end of house.....	356	46	..	 2¼ miles.

DOT.

General locality.—Southern shore of Choptank River on Todd Point, about 3 miles east of Cook Point, and 3½ miles southwest of Choptank River Light. (See Chart No. 37.)

Immediate locality.—Observed station is about 4 feet above high water, 55 yards west-southwest of shore, 30 yards south-southwest of edge of bank, 40 yards south by east of point where bank meets marsh, 70 yards south by west of extreme end of point, and 200 yards northeast by north of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 56° 26' E).....	0	00	00	 3¼ miles.
"Large Water Tank".....	37	36	00	 3½ miles.
Near peak of house.....	42	45	..	 2¾ miles.
Near peak of building.....	72	49	..	 2¼ miles.
Chimney outside right end of house.....	102	18	..	 1¾ miles.
Chimney outside near end of house.....	175	25	..	 200 yards.
Left chimney of house on Cook Point.....	212	24	..	 2¾ miles.
"Sharps Island Light".....	218	32	40	 7½ miles.
Church Spire.....	250	04	40	 7¼ miles.
Left peak of house.....	277	10	..	 7¼ miles.
Near peak of barn.....	290	09	..	 7½ miles.
Cupola on house.....	333	02	..	 3½ miles.

HUDSON.

General locality.—Northern shore of Little Choptank River on Casons Point, about 1 mile north of Susquehanna Point, and $1\frac{1}{2}$ miles east-northeast of Ragged Point. (See Chart No. 37.)

Immediate locality.—Observed station is on sand beach about on level with high water, 2 yards south of a rail fence extending along shore, and 130 yards west-northwest of end of woods at shore. Cement monument marking reference station is 29.65 meters N $8^{\circ} 30'$ W of observed station. Four-inch tile pipe marking old reference station is 3.99 meters N $7^{\circ} 14'$ W of observed station.

Marks.—Observed station is center of 4-inch tile pipe set in cement projecting 3 inches above surface of cement and 6 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Old reference station is center of 4-inch tile pipe projecting 3 inches above surface of ground.

References.—

	°	'	"	
"Jenifer" (N $1^{\circ} 41'$ W).....	0	00	00	 $\frac{3}{4}$ mile.
Left chimney of $1\frac{1}{2}$ -story house.....	13	24	.....	$1\frac{1}{4}$ miles.
Near peak of barn.....	30	45	.....	$1\frac{1}{8}$ miles.
"Madison Southern M. E. Church Spire"....	145	10	30	 $2\frac{3}{4}$ miles.
Near peak of barn.....	213	30	.....	$3\frac{1}{2}$ miles.
Left chimney of house on Hooper Point.....	223	01	.....	$3\frac{1}{2}$ miles.
Near peak of house.....	251	57	.....	5 miles.
Right chimney of house.....	327	50	.....	$\frac{1}{4}$ mile.
Near peak of barn.....	350	21	.....	$\frac{1}{2}$ mile.
Near peak of house.....	352	51	.....	$\frac{3}{4}$ mile.
NEW REFERENCE STATION (CEMENT MONU- MENT).....	353	11	50	 29.65 meters.
OLD REFERENCE STATION (TILE PIPE).....	354	26	30	 3.99 meters.

JENIFER.

General locality.—Western shore of Hudson Creek about $\frac{3}{8}$ mile northwest of entrance to Back Creek and $\frac{3}{4}$ mile north of Casons Point. (See Chart No. 37.)

Immediate locality.—Observed station is on edge of cultivated field about 2 feet above high water, 2 yards northeast of shore, 9 yards southwest of shore, 55 yards north by west of extreme end of marsh point, and 65 yards southeast of corner of wire fence about in line with a barn.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Henry" (N $1^{\circ} 06'$ W).....	0	00	00	 $\frac{1}{8}$ mile.
Tangent of left end of Ross Wharf.....	8	55	.....	1 mile.
Near peak of barn.....	20	24	.....	1 mile.
Chimney on left end of house.....	32	30	.....	$\frac{1}{2}$ mile.
Near peak of barn.....	64	33	.....	$\frac{5}{8}$ mile.
Chimney on near end of house.....	85	48	.....	1 mile.
Chimney on near end of house.....	119	59	.....	2 miles.
"Madison Southern M. E. Church spire"....	151	57	30	 3 miles.
Tangent of Casons Point.....	159	58	.....	$\frac{3}{4}$ mile.
Chimney on near end of house.....	189	26	.....	$\frac{1}{2}$ mile.
Near peak of house.....	225	32	.....	$\frac{1}{4}$ mile.
Lightning rod on house.....	276	57	.....	225 yards.
Near peak of barn.....	304	00	.....	$\frac{1}{8}$ mile.

HENRY.

General locality.—Western shore of Hudson Creek at south side of entrance to a cove about 1 mile north of Casons Point. (See Chart No. 37.)

Immediate locality.—Observed station is about 2 feet above high water, 5 yards south of shore, 5 yards northwest of shore, 10 yards west of extreme end of point, and 34 yards north of wire fence at shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mitchell" (N 3° 08' E).....	0	00	00	1/4 mile.
Tangent to left end of Ross Wharf.....	5	28	..	1/8 mile.
Chimney in center of small house.....	17	23	..	1/8 mile.
Chimney on left end of house.....	41	04	..	3/8 mile.
Near peak of barn.....	56	29	..	1/8 mile.
Chimney on near end of house.....	96	44	..	5/8 mile.
"Madison Southern M. E. Church spire".....	148	58	00	3 miles.
Chimney on right end of house.....	209	20	..	1/8 mile.
Chimney on left end of house.....	340	27	..	1/4 mile.

MITCHELL.

General locality.—Western shore of Hudson Creek about 3/4 mile north-northwest of entrance to Back Creek and 1 1/4 miles north of Casons Point. (See Chart No. 37.)

Immediate locality.—Observed station is in a small grove of oak trees about 2 feet above high water, 11 yards southwest of shore, 12 yards north of shore, and 29 yards west of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Back" (N 70° 51' E).....	0	00	00	1/4 mile.
Chimney on near end of house.....	23	09	..	1/4 mile.
Chimney on small house.....	35	09	..	5/8 mile.
Chimney on right end of house.....	41	36	..	3/8 mile.
Chimney on right end of house.....	53	32	..	3/8 mile.
Near peak of house.....	122	09	..	3/8 mile.
Near peak of barn.....	133	23	..	3/8 mile.
Nail in blaze in oak tree (18 inches diameter).....	178	27	00	8.72 meters.
Nail in blaze in oak tree (16 inches diameter).....	194	51	20	14.95 meters.
Chimney on left end of house.....	276	17	..	3/4 mile.
Nail in blaze in oak tree (12 inches diameter).....	281	12	30	10.93 meters.
Near peak of barn.....	321	03	..	5/8 mile.

BACK.

General locality.—Eastern shore of Hudson Creek about 3/4 mile north of entrance to Back Creek and 1 3/4 miles north of Casons Point. (See Chart No. 37.)

Immediate locality.—Observed station is on solid ground at edge of woods about 2 feet above high water, 14 yards east of shore, 16 yards northeast of shore, 45 yards south-southeast of shore, and 175 yards north-northwest of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bayly" (S 1° 40' E)	0	00	00	3/8 mile.
Near chimney of house	29	44	..	3/4 mile.
Near peak of house	33	20	..	5/8 mile.
Near peak of barn	42	53	..	1/2 mile.
Chimney on near end of house	72	05	..	3/8 mile.
Left chimney of house	151	44	..	3/4 mile.
Nail in blaze in pine tree (12 inches diameter) ..	175	02	50	8.05 meters.
Nail in blaze in pine tree (12 inches diameter) ..	226	14	50	11.19 meters.
Nail in blaze in pine tree (12 inches diameter) ..	305	13	20	16.04 meters.
Right chimney of house	340	53	..	175 yards.

BAYLY.

General locality.—Eastern shore of Hudson Creek about 3/8 mile north of entrance to Back Creek and 1 mile north of Casons Point. (See Chart No. 37.)

Immediate locality.—Observed station is on marsh about on level with high water, 11 yards east of shore, 20 yards south of shore, 22 yards northeast of shore, 8 yards west of a bank 3 feet high, and 15 yards southwest of a large dead cherry tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Jenifer" (S 55° 44' W)	0	00	00	1/4 mile.
Near peak of house	9	20	..	3/8 mile.
Left peak of barn	23	59	..	3/8 mile.
Right chimney of house	73	18	..	3/8 mile.
Left chimney of house	103	15	..	1 1/8 miles.
Left chimney of house	117	03	..	..
Left chimney of house	129	28	..	1/4 mile.
Nail in blaze in cherry tree (4 inches diameter) ..	172	17	00	8.19 meters.
Near peak of small house	193	18	..	3/8 mile.

CARRIE.

General locality.—Eastern shore of Hudson Creek on north side of entrance to Back Creek about 3/4 mile north of Casons Point. (See Chart No. 37.)

Immediate locality.—Observed station is near edge of a cultivated field about 4 feet above high water, 15 yards east of shore, 3 yards east of edge of bank, and 160 yards north of point at north side of entrance to Back Creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Louise" (S 28° 56' E)	0	00	00	1/4 mile.
"Madison Southern M. E. Church Spire" ..	3	09	30	3 miles.
Left chimney of house	74	19	..	3/8 mile.
Chimney in center of house	101	56	..	3/8 mile.
Lightning rod on right end of house	126	31	..	3/8 mile.
Left dormer window of house	174	31	..	1/2 mile.
Left chimney of house	191	27	..	1 1/4 miles.
Nail in blaze in cedar tree (10 inches diameter) ..	196	50	50	9.35 meters.
Near peak of barn	229	58	..	1/2 mile.
Near end of house	285	09	..	1 1/4 miles.
Near peak of barn	306	17	..	2 miles.

LOUISE.

General locality.—Eastern shore of Hudson Creek on point at south side of entrance to Back Creek about $\frac{1}{2}$ mile north of Casons Point. (See Chart No. 37.)

Immediate locality.—Observed station is on sand and marsh point about 1 foot above high water, 18 yards north-northeast of shore, 22 yards southeast of shore, 30 yards northwest of shore, and 30 yards east-northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mac" (S 64° 57' E).....	0	00	00	 1 $\frac{1}{4}$ miles.
Chimney of house.....	0	39	..	 1 $\frac{1}{4}$ miles.
"Madison Southern M. E. Church Spire"....	39	32	00	 2 $\frac{1}{2}$ miles.
Tangent of Casons Point.....	74	06	..	 $\frac{1}{2}$ mile.
Center chimney of house.....	129	17	..	 $\frac{1}{2}$ mile.
Left end of house.....	155	13	..	 $\frac{1}{2}$ mile.
Chimney in center of house.....	172	15	..	 $\frac{1}{2}$ mile.
Near peak of barn.....	192	22	..	 $\frac{3}{4}$ mile.
Near peak of barn.....	280	20	..	 $\frac{1}{2}$ mile.
Right chimney of house.....	302	08	..	 $\frac{5}{8}$ mile.
Right chimney of house.....	338	31	..	 2 miles.

GREENWELL.

General locality.—Northwestern shore of Little Choptank River on point of land at north side of entrance to a cove between Butter Pot Point and Cedar Point about $\frac{3}{4}$ mile northwest of McKeils Point. (See Chart No. 37.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 5 yards north of shore, 13 yards southwest of shore, and 25 yards northwest of extreme end of point. Cement monument marking reference station is 27.78 meters N 35° 11' W of observed station.

Marks.—Observed station is nail in pine stub projecting 12 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Ross" (N 62° 17' E).....	0	00	00	 $\frac{3}{4}$ mile.
Near peak of barn.....	32	39	..	 1 $\frac{3}{8}$ miles.
"Madison Southern M. E. Church Spire"....	102	24	30	 2 $\frac{1}{2}$ miles.
Left peak of large house.....	126	28	..	 2 miles.
Near peak of barn.....	155	20	..	 4 $\frac{3}{8}$ miles.
Center chimney of house.....	189	03	..	 1 mile.
Near peak of barn.....	253	14	..	 $\frac{5}{8}$ mile.
REFERENCE STATION.....	262	32	50	 27.78 meters.
Near peak of barn.....	309	25	..	 $\frac{1}{4}$ mile.
Left chimney of house.....	314	49	..	 $\frac{1}{4}$ mile.
Center chimney of house.....	344	58	..	 $\frac{3}{4}$ mile.

ROSS.

General locality.—Northwestern shore of Little Choptank River on Cedar Point about $\frac{3}{4}$ mile north of entrance to Fishing Creek. (See Chart No. 37.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 25 yards southwest of shore, 30 yards west of shore, 60 yards north by west of extreme end of point, and 150 yards east by south of four pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Lee" (N 51° 25' E).....	0	00	00	3/8 mile.
Chimney on near peak of house.....	21	43	..	2 3/4 miles.
Near peak of barn.....	23	09	..	2 3/4 miles.
Chimney on near end of house.....	43	27	..	7/8 mile.
Near peak of barn.....	71	32	..	1 1/8 miles.
Chimney on left end of house.....	100	13	..	2 miles.
A cupola.....	101	09	..	2 miles.
Left one of four pine trees standing together. .	233	19	..	150 yards.
Right chimney of 1 1/2-story house.....	272	46	..	1/8 mile.
Left chimney of house.....	292	11	..	1 1/4 miles.
Center of roof of bungalow on Cherry Island..	341	28	..	1 mile.

PHIL.

General locality.—Northwestern shore of entrance to Beckwith and Phillips Creeks on point at west side of entrance to Phillips Creek about 1/4 mile northeast of Cherry Island. (See Chart No. 37.)

Immediate locality.—Observed station is on sand and marsh about 1 foot above high water, 12 yards southwest of shore, 33 yards north of shore, 25 yards west-northwest of extreme end of point, and 40 yards from trees along edge of cultivated field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cherry Island Water Tank" (S 72° 48' E)..	0	00	00	3/8 mile.
Tangent of Town Point.....	64	42	..	1 1/8 miles.
Tangent of McKeils Point.....	82	21	..	1 3/4 miles.
Near peak of barn.....	102	15	..	3/4 mile.
Chimney on near end of house.....	222	19	..	1 1/4 miles.
Chimney on left end of house.....	245	00	..	1/2 mile.
Near peak of house.....	319	59	..	3/4 mile.

DUPONT.

General locality.—Western shore of Beckwith Creek about 1/8 mile northwest of the northeast end of Cherry Island. (See Chart No. 37.)

Immediate locality.—Observed station is in a grove of small pine trees about 1 foot above high water, 17 yards west of shore, 25 yards northwest of shore, and 35 yards north of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cherry Island Water Tank" (S 12° 29' W)...	0	00	00	3/8 mile.
Center of roof of bungalow on Cherry Island...	6	09	..	3/8 mile.
Chimney on near end of house.....	25	05	..	1 1/8 miles.
Nail in blaze in holly tree (4 inches diameter).....	34	05	30	6.55 meters.
Near end of 1 1/2-story house.....	46	39	..	7/8 mile.
Nail in blaze in cedar tree (6 inches diameter).....	106	30	50	12.84 meters.
Near peak of barn.....	205	33	..	1 mile.
Near peak of house.....	242	50	..	1/4 mile.
Between two chimneys on house.....	295	09	..	1/2 mile.
Nail in blaze in pine tree (6 inches diameter).....	297	22	40	6.60 meters.

BECKWITH.

General locality.—Eastern shore of Beckwith Creek about $\frac{1}{4}$ mile northeast of the northeast end of Cherry Island. (See Chart No. 37.)

Immediate locality.—Observed station is near edge of a cultivated field about 2 feet above high water, 30 yards northeast of shore, 35 yards east of shore, 35 yards southeast of shore, and about $\frac{1}{8}$ mile south by east of small $1\frac{1}{2}$ -story house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cherry Island Water Tank" (S 53° 40' W)...	0	00	00	 $\frac{1}{2}$ mile.
Chimney of small house on Cherry Island....	4	38	..	 $\frac{1}{2}$ mile.
Near peak of barn.....	21	51	..	 $1\frac{1}{4}$ miles.
Nail in blaze in locust tree (4 inches diameter).	93	09	50	 20.32 meters.
Near peak of barn.....	97	47	..	 $\frac{1}{2}$ mile.
Nail in blaze in locust tree (3 inches diameter).	102	49	30	 19.46 meters.
Near peak of barn.....	105	55	..	 $\frac{1}{2}$ mile.
Left chimney of house.....	300	34	..	 $\frac{1}{4}$ mile.

CHERRY ISLAND WATER TANK.

General locality.—Northeastern side of Little Choptank River on Cherry Island. (See Chart No. 37.)

Immediate locality.—Observed station is on water tower on south end of Cherry Island.

Marks.—Observed station is flagstaff on water tank on Cherry Island.

References.—None necessary.

LEE.

General locality.—North shore of upper Little Choptank River on point between Little Choptank River and Beckwiths Creek. (See Chart No. 37.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 5 yards northeast of shore, 25 yards south of shore, 60 yards east-southeast of extreme end of point, and 175 yards west-northwest of pine woods at shore. Cement monument marking reference station is 11.51 meters N 4° 54' E of observed station.

Marks.—Observed station is nail in 3-inch pine stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Cherry Island Water Tank" (N 4° 08' E)....	0	00	00	 $\frac{3}{4}$ mile.
REFERENCE STATION.....	0	46	00	 11.51 meters.
Right chimney of house.....	23	46	..	 $\frac{3}{4}$ mile.
Near peak of barn.....	76	32	..	 $2\frac{1}{4}$ miles.
Near peak of barn.....	95	31	..	 $1\frac{1}{2}$ miles.
Tangent of McKeils Point.....	201	44	..	 $1\frac{1}{4}$ miles.
Near peak of barn.....	251	02	..	 $\frac{5}{8}$ mile.
Left chimney of house.....	323	30	..	 $1\frac{3}{4}$ miles.
Center of roof of bungalow on Cherry Island...	354	28	..	 $\frac{3}{8}$ mile.

SOLOMON.

General locality.—Northern shore of upper Little Choptank River on point west at side of entrance to Solomons Cove about $1\frac{3}{8}$ miles northeast of Town Point. (See Chart No. 37.)

Immediate locality.—Observed station is on marsh point about on level with high water, 1 yard east of shore, 3 yards west of shore, and 5 yards north of extreme end of point. Cement monument marking reference station is 14.34 meters N 2° 39' W of observed station.

Marks.—Observed station is nail in cedar stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Lee" (S 72° 38' W).....	0	00	00	 7/8 mile.
"Cherry Island Water Tank".....	22	45	50	 3/8 mile.
Near chimney of house.....	33	38	..	 3/8 mile.
REFERENCE STATION.....	104	42	20	 14.34 meters.
Chimney of house.....	124	37	..	 1/4 mile.
Right peak of barn.....	201	41	..	 1 1/2 miles.
Near peak of barn.....	254	10	..	 1/2 mile.
Near peak of barn.....	303	39	..	 1/2 mile.
Chimney on near end of house.....	357	56	..	 1 1/2 miles.

SETH.

General locality.—Northern shore of upper Little Choptank River opposite entrance to Smiths Cove, and about 1/2 mile east of Solomons Cove. (See Chart No. 37.)

Immediate locality.—Observed station is on marsh point about on level with high water, 3 yards northwest of shore, 5 yards northeast of shore, and 100 yards west-southwest of extreme end of point. Cement monument marking reference station is 24.90 meters N 26° 06' W of observed station.

Marks.—Observed station is nail in cedar stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Adam" (S 21° 04' W).....	0	00	00	 1/4 mile.
Near peak of barn.....	12	11	..	 1/2 mile.
Middle chimney of house.....	14	52	..	 1/2 mile.
Chimney on center of house.....	32	07	..	 3/4 mile.
Chimney on near end of house.....	54	58	..	 2 1/2 miles.
REFERENCE STATION.....	132	50	30	 24.00 meters.
Chimney on left end of house.....	181	37	..	 3/4 mile.
Chimney on right end of house.....	194	13	..	 1 1/4 miles.
Near peak of large house.....	208	17	..	 3/4 mile.
Chimney on near end of small house.....	236	50	..	 1/2 mile.
Right chimney of house.....	263	57	..	 5/8 mile.
Right peak of barn.....	321	40	..	 1 mile.

ADAM.

General locality.—Southeastern shore of upper Little Choptank River about 1/2 mile west of entrance to Smith Cove. (See Chart No. 37.)

Immediate locality.—Observed station is on marsh point about on level with high water, 3 yards south of shore, 3 yards southwest of shore, and 6 yards east of shore. Cement monument marking reference station is 27.50 meters S 33° 31' E of observed station.

Marks.—Observed station is nail in cedar stub projecting 5 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Seth" (N 21° 03' E).....	0	00	00	 1/4 mile.
Chimney on 1 1/2-story house.....	1	10	..	 1 1/8 miles.
Chimney on right end of house.....	11	50	..	 1 1/2 miles.
Near peak of large house.....	19	50	..	 1 mile.
Chimney on near end of small house.....	42	36	..	 1 mile.
Near peak of barn.....	47	07	..	 1 mile.
Near peak of barn.....	49	58	..	 1 mile.
REFERENCE STATION.....	125	25	30	 27.50 meters.
Near peak of barn.....	204	36	..	 1/4 mile.
Near chimney of house.....	211	16	..	 1/4 mile.
Near peak of barn.....	244	05	..	 2 miles.

Survey of Oyster Bars, Dorchester County, Md.

LAYTON.

General locality.—Southeast shore of Little Choptank River about $\frac{1}{2}$ mile south of Solomons Cove and $1\frac{1}{4}$ miles east-northeast of Town Point. (See Chart No. 37.)

Immediate locality.—Observed station is about 1 foot above high water, 2 yards east of edge of bank 1 foot high, 23 yards west of shore, 24 yards south-southwest of shore, 30 yards northwest of shore, 18 yards north of a graveyard, and 150 yards northeast of a house. Cement monument marking reference station is 17.13 meters $S 45^{\circ} 02' E$ of observed station.

Marks.—Observed station is nail in locust stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	o	'	"	
"Lee" ($N 79^{\circ} 26' W$).....	0	00	00	 1 mile.
Right chimney of house.....	3	36	..	 $1\frac{3}{4}$ miles.
"Cherry Island Water Tank".....	19	34	10	 1 mile.
Chimney on center of house.....	82	18	..	 $\frac{3}{8}$ mile.
Nail in blaze in cedar tree (8 inches diameter).....	108	55	40	 3.85 meters.
Chimney on near end of small house.....	144	51	..	 $1\frac{1}{4}$ miles.
Nail in blaze in cedar tree (6 inches diameter).....	167	51	40	 6.49 meters.
Near chimney of house.....	172	50	..	 $\frac{1}{4}$ mile.
REFERENCE STATION.....	214	23	30	 17.13 meters.
Near chimney of house.....	306	53	..	 150 yards.
Near peak of barn.....	346	20	..	 $1\frac{1}{2}$ miles.

DAVID.

General locality.—Southern shore of upper Little Choptank River on point about $\frac{5}{8}$ mile northeast of Town Point and $\frac{3}{4}$ mile southeast of Lee Point. (See Chart No. 37.)

Immediate locality.—Observed station is on a marsh point about on level with high water, 3 yards west of shore, 3 yards east of shore, 3 yards south of extreme end of point, and 100 yards north of pine woods. Cement monument marking reference station is 15.24 meters $S 2^{\circ} 58' E$ of observed station.

Marks.—Observed station is a nail in 3-inch pine stub flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	o	'	"	
"Town" ($S 47^{\circ} 24' W$).....	0	00	00	 $\frac{5}{8}$ mile.
Tangent of Butter Pot Point.....	12	18	..	 $1\frac{3}{4}$ miles.
Near peak of barn.....	32	37	..	 $1\frac{1}{2}$ miles.
Center chimney of house.....	34	46	..	 $1\frac{3}{8}$ miles.
Near peak of barn.....	49	57	..	 1 mile.
Chimney on near end of house.....	93	55	..	 2 miles.
Left end of barn roof.....	147	58	..	 $\frac{5}{8}$ mile.
Near peak of barn.....	203	42	..	 2 miles.
REFERENCE STATION.....	309	37	30	 15.24 meters.

TOWN.

General locality.—Southeastern shore of Little Choptank River on northeast side of entrance to Fishing Creek on Town Point. (See Chart No. 37.)

Immediate locality.—Observed station is on a small marsh point on the north side of Town Point about 1 foot above high water, 9 yards east of shore, 14 yards southwest of shore, 14 yards south-southeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe with top 2 inches below base of monument.

References.—

	°	'	"	
"Lee" (N 8° 42' E).....	0	00	00	5½ mile.
Peak of barn showing through trees.....	111	53	..	¾ mile.
Tangent of Casons Point.....	236	40	..	1¾ miles.
Near peak of barn.....	268	16	..	2 miles.
Near peak of large barn.....	270	18	..	1 mile.
Center chimney of house.....	274	20	..	1 mile.
Left chimney of house.....	300	39	..	¾ mile.
Right chimney of house.....	318	44	..	1¾ miles.
Center chimney of house.....	342	06	..	1¾ miles.
Center of near side of roof of bungalow on Cherry Island.....	356	30	..	1 mile.

SWEP.

General locality.—Northeastern shore of Fishing Creek about ¾ mile east-northeast of McKeils Point and ¼ mile east-southeast of Town Point. (See Chart No. 37.)

Immediate locality.—Observed station is on firm land about 1 foot above high water, 9 yards northeast of shore, 10 yards northwest of shore, 7 yards north of extreme end of point, and 30 yards southwest by south of near corner of a dairy.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hugh" (S 8° 20' E).....	0	00	00	½ mile.
Near chimney of house.....	2	23	..	1½ miles.
Chimney on right end of house.....	41	48	..	¾ mile.
Tangent of McKeils Point.....	75	01	..	¾ mile.
Center chimney of house.....	116	11	..	1¼ miles.
Tangent of Town Point.....	116	20	..	¼ mile.
Near corner of dairy.....	214	18	..	30 yards.
Nail in apple tree (10 inches diameter).....	221	54	10	13.14 meters.
Near peak of house.....	301	55	..	¼ mile.

HUGH.

General locality.—Eastern shore of Fishing Creek about ¾ mile southeast of Town Point and ¾ mile northwest of Windmill Point. (See Chart No. 37.)

Immediate locality.—Observed station is on high marsh about 2 feet above high water, 12 yards north-east of shore, 13 yards southeast of shore, and 17 yards east of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Etta" (S 64° 09' E).....	0	00	00	¼ mile.
Near peak of barn.....	136	28	..	¾ mile.
Near chimney of house.....	138	34	..	½ mile.
Tangent of McKeils Point.....	168	46	..	½ mile.
Near peak of barn.....	175	17	..	2½ miles.
Near peak of barn.....	185	52	..	1¾ miles.
Left chimney of house.....	188	25	..	1¾ miles.
Middle chimney of house.....	205	46	..	1½ miles.
Left chimney of house.....	236	05	..	½ mile.
Nail in blaze in twin dead cedar tree.....	252	02	30	13.64 meters.

ETTA.

General locality.—Northeastern shore of Fishing Creek at east side of entrance to a small creek about $\frac{1}{4}$ mile north of Windmill Point. (See Chart No. 37.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 8 yards east of shore, 9 yards northeast of shore, 11 yards southeast of shore, and 100 yards west of a barn.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Mary" (S 1° 38' E).....	0	00	00	 $\frac{1}{4}$ mile.
Cupola on Brooks barn.....	28	39	..	 $\frac{3}{4}$ mile.
Center of cupola on Brooks workshop.....	31	45	..	 $\frac{3}{4}$ mile.
Right chimney of house.....	47	13	..	 $\frac{5}{8}$ mile.
Left peak of house.....	96	59	..	 1 mile.
Chimney on near end of house.....	134	04	..	 $\frac{1}{8}$ mile.
Near peak of house.....	144	11	..	 $\frac{1}{8}$ mile.
Near peak of large part of house.....	217	34	..	 $\frac{1}{8}$ mile.
Peak of barn.....	258	47	..	 100 yards.

MARY.

General locality.—Northeastern shore of Fishing Creek on Windmill Point, about $1\frac{1}{2}$ miles southeast of Little Choptank River entrance to Fishing Creek. (See Chart No. 37.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 11 yards northwest of shore, 17 yards southeast of shore, and 18 yards east of shore. Cedar stub marking old station "Windmill Point" is 12.60 meters S 82 22' W of observed station.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Neil" (S 86° 09' E).....	0	00	00	 $\frac{5}{8}$ mile.
Near peak of house.....	23	41	..	 $\frac{5}{8}$ mile.
Right chimney of house.....	30	19	..	 $1\frac{1}{4}$ miles.
Right chimney of house.....	47	26	..	 $\frac{5}{8}$ mile.
Right chimney of house.....	100	37	..	 $\frac{1}{2}$ mile.
Left chimney of Brooks house.....	125	56	..	 $\frac{5}{8}$ mile.
Cupola on Brooks workshop.....	132	58	..	 $\frac{5}{8}$ mile.
Right chimney of house.....	156	43	..	 $\frac{1}{2}$ mile.
"Windmill Point" (cedar stub).....	168	31	20	 12.60 meters.
Near peak of barn.....	212	09	..	 $2\frac{1}{4}$ miles.

NEIL.

General locality.—Northern shore of Fishing Creek about $\frac{5}{8}$ mile east of Windmill Point. (See Chart No. 37.)

Immediate locality.—Observed station is on third marsh point east of Windmill Point about 1 foot above high water, 3 yards north of shore, 5 yards northeast of shore, 5 yards northwest of shore, 70 yards south-southeast of gate to yard of farm house, and 115 yards south of farmhouse. Cement monument marking reference station is 26.10 meters N 5° 41' E of observed station.

Marks.—Observed station is nail in cedar stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	''	
"Tom" (S 68° 55' W).....	0	00	00	 $\frac{3}{4}$ mile.
Cupola on Brooks barn.....	3	45	..	 1 mile.
Center of Brooks workshop cupola.....	4	35	..	 1 mile.
Chimney of house.....	41	02	..	 $\frac{1}{4}$ mile.

References—Continued.

	°	'	"	
Near chimney of house	93	07		110 yards.
Cupola on barn	106	02		140 yards.
REFERENCE STATION	116	45	30	26.10 meters.
Near chimney of house	185	52		$\frac{3}{8}$ mile.
Near peak of house	199	48		1 mile.
Lightning rod on right end of house	307	25		$\frac{1}{4}$ mile.
Near peak of house	351	38		$\frac{7}{8}$ mile.

KIRBY.

General locality.—Northern shore of Fishing Creek opposite entrance to Church Creek about 1 mile east of Windmill Point. (See Chart No. 37.)

Immediate locality.—Observed station is on solid land about 1 foot above high water, 5 yards north of shore, 6 yards northeast of shore, 10 yards east of shore, 45 yards southwest of wire fence, and 125 yards south of a small house. Cement monument marking reference station is 19.99 meters N $5^{\circ} 25'$ E of observed station.

Marks.—Observed station is nail in stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of the ground.

References.—

	°	'	"	
"Neil" (S $85^{\circ} 03'$ W)	0	00	00	$\frac{3}{8}$ mile.
Left chimney of large house	9	29		$\frac{3}{8}$ mile.
Cupola on barn	17	20		$\frac{3}{8}$ mile.
Near peak of house	69	50		125 yards.
Right chimney of house	79	22		$\frac{1}{4}$ mile.
REFERENCE STATION	100	21	40	19.99 meters.
Near peak of house	162	42		$\frac{1}{2}$ mile.
Two chimneys of house nearly in range	186	31		$\frac{3}{4}$ mile.
Right chimney of house	281	32		$\frac{3}{8}$ mile.
Left chimney of house	327	52		$\frac{3}{4}$ mile.
Center lightning rod of house	332	48		$\frac{1}{2}$ mile.
Cupola on Brooks barn	351	25		$1\frac{3}{8}$ miles.

PAUL (LITTLE CHOPTANK RIVER).

General locality.—Northern shore of Fishing Creek, about $1\frac{1}{8}$ miles northeast of Deep Water Point. (See Progress map.)

Immediate locality.—Observed station is near edge of a garden about 1 foot above high water, 8 yards north of shore, 10 yards west of shore, 13 yards northeast of shore, and 40 yards southeast of a $1\frac{1}{2}$ -story house. Cement monument marking reference station is 8.53 meters N $28^{\circ} 53'$ W of observed station.

Marks.—Observed station is nail in locust stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Neil" (S $76^{\circ} 32'$ W)	0	00	00	$1\frac{1}{8}$ miles.
Cupola on barn	7	37		$1\frac{1}{2}$ miles.
Near corner of house	47	49		40 yards.
REFERENCE STATION	74	35	00	8.53 meters.
Near chimney of house	168	51		$\frac{1}{2}$ mile.
Near peak of barn	190	58		$1\frac{1}{2}$ miles.
Right chimney of house	243	15		$\frac{1}{2}$ mile.
Near peak of barn	258	13		$\frac{1}{2}$ mile.
Near peak of barn	321	55		$1\frac{1}{8}$ miles.
Left chimney of house	343	18		$1\frac{3}{8}$ miles.
Near peak of house	352	35		$1\frac{3}{4}$ miles.
Cupola on Brooks barn	358	14		2 miles.

CHURCH CREEK (NO. 1 WEST).

General locality.—Western shore of Church Creek, about $\frac{3}{8}$ mile south of Fishing Creek. (See Chart No. 37.)

Immediate locality.—Observed station is near edge of cultivated land about 2 feet above high water, 3 yards south of shore, 20 yards northwest of shore, and 30 yards east of extreme end of point. Cement monument marking reference station is 14.60 meters S 4° 47' W of observed station.

Marks.—Observed station is nail in stub projecting 2 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Kirby" (N 1° 27' W).....	0	00	00	 $\frac{5}{8}$ mile.
Near peak of left one of two barns.....	26	38	..	 1 mile.
Near peak of barn.....	41	32	..	 1 mile.
Chimney of $1\frac{1}{2}$ -story house.....	131	24	..	 $\frac{1}{2}$ mile.
REFERENCE STATION.....	186	13	40	 14.60 meters.
Chimney on near end of house.....	228	21	..	 200 yards.
Chimney on left end of house.....	300	05	..	 $\frac{1}{2}$ mile.
Right chimney of large house.....	326	54	..	 $\frac{3}{4}$ mile.
Chimney on left end of $1\frac{1}{2}$ -story house.....	356	27	..	 $\frac{3}{8}$ mile.

AUSTIN.

General locality.—Southern shore of Fishing Creek, on a point about $\frac{5}{8}$ mile east-southeast of Windmill Point. (See Chart No. 37.)

Immediate locality.—Observed station is at edge of young orchard about 3 feet above high water, 18 yards south of shore, 35 yards southwest of shore, 2 yards southwest of edge of bank next to marsh, 10 yards east of edge of bank, and 75 yards north-northwest of near corner of a two-story house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tom" (S 86° 17' W).....	0	00	00	 $\frac{5}{8}$ mile.
Left chimney of house.....	9	38	..	 1 mile.
Left chimney of house.....	108	10	..	 $\frac{1}{4}$ mile.
Chimney on left end of house.....	149	11	..	 $\frac{1}{2}$ mile.
Near peak of $1\frac{1}{2}$ -story house.....	158	55	..	 $1\frac{1}{8}$ miles.
Near peak of house.....	172	21	..	 1 mile.
Nail in blaze in persimmon tree (10 inches diameter).....	213	14	50	 4.86 meters.
Near corner of house.....	237	36	..	 75 yards.
Near peak of house.....	347	06	..	 $\frac{3}{4}$ mile.
Cupola on Brooks barn.....	358	49	..	 $\frac{1}{8}$ mile.
Center of cupola on Brooks workshop.....	359	18	..	 $\frac{3}{8}$ mile.

TOM.

General locality.—Southwestern shore of Fishing Creek, on a point of land between two coves, about $\frac{1}{4}$ mile south of Windmill Point, and $1\frac{1}{2}$ miles southeast of Little Choptank River. (See Chart No. 37.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 9 yards southwest of end of point, and 10 yards southeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Brooks" (S 89° 03' W).....	0	00	00	1/4 mile.
Left chimney of house.....	20	00	00	3/8 mile.
Near peak of barn.....	58	43	00	2 3/4 miles.
Chimney on middle of house.....	145	02	00	5/8 mile.
Chimney on left end of large house.....	154	12	00	3/4 mile.
Chimney on near end of house.....	162	17	00	1 1/8 miles.
Center lightning rod on large house.....	181	03	00	5/8 mile.
Near chimney of house.....	205	55	00	1/2 mile.
Center of cupola on barn.....	288	51	00	1/8 mile.
Left chimney of house.....	300	30	00	125 yards.
Cupola on Brooks barn.....	353	38	00	1/4 mile.
Center of cupola on Brooks workshop.....	355	15	00	1/4 mile.

BROOKS.

General locality.—Southwestern shore of Fishing Creek, near Brooks shipyard, about 1/2 mile southwest of Windmill Point. (See Chart No. 37.)

Immediate locality.—Observed station is on marsh about 8 yards south of shore, 11 yards southeast of shore, 15 yards northeast of shore, and 50 yards north by west of northeast end of large workshop.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Doctor" (N 2° 28' E).....	0	00	00	3/8 mile.
Near peak of barn.....	26	34	00	3/4 mile.
Cupola on center of large barn.....	66	29	00	1 mile.
Left chimney of large house.....	68	35	00	1 mile.
Near peak of house.....	77	38	00	2 miles.
Lightning rod on near end of house.....	87	10	00	1 mile.
Chimney on near end of house.....	103	31	00	100 yards.
Weather vane on barn cupola.....	127	20	00	75 yards.
Cupola on workshop.....	182	11	00	45 yards.
Chimney on near end of house.....	328	00	00	1/2 mile.

DOCTOR.

General locality.—Western shore of Fishing Creek on a prominent point about 1 mile southeast of Little Choptank River. (See Chart No. 37.)

Immediate locality.—Observed station is on sand and marsh about 1 foot above high water, 30 yards southwest of shore, 30 yards northwest of shore, and 25 yards west of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Eleanor" (N 81° 04' W).....	0	00	00	1/4 mile.
Tangent of McKeils Point.....	32	51	00	3/8 mile.
Middle dormer window of house.....	34	24	00	2 miles.
Near peak of barn.....	50	52	00	2 miles.
Left chimney of house.....	111	40	00	3/8 mile.
Right chimney of house.....	131	21	00	1/2 mile.
Near peak of barn.....	193	51	00	1 mile.
Left chimney of house.....	209	16	00	1 mile.
Right chimney of house.....	252	13	00	3/8 mile.
Weather vane on barn cupola.....	257	22	10	3/8 mile.
Cupola on Brooks workshop.....	263	41	00	3/8 mile.

ELEANOR.

General locality.—Southwestern shore of Fishing Creek about $\frac{5}{8}$ mile south-southeast of McKeils Point, and 1 mile south of Town Point. (See Chart No. 37.)

Immediate locality.—Observed station is on sandy land at edge of woods about 10 yards southwest by south of shore, 15 yards west-northwest of shore, 28 yards west-southwest of extreme end of small marsh point, and 70 yards west-northwest of shore end of fence extending into water at a marsh point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of the ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Laney" (N 14° 32' W).....	0	00	00	 $\frac{1}{2}$ mile.
"Cherry Island Water Tank".....	19	14	20	 $2\frac{1}{4}$ miles.
Middle dormer window of house.....	34	35	..	 1 mile.
Near peak of barn.....	37	51	..	 1 mile.
Left chimney of house.....	48	56	..	 1 mile.
Right chimney of house.....	85	35	..	 $\frac{3}{8}$ mile.
Right end of barn roof.....	94	16	..	 1 mile.
Nail in blaze in cedar tree (10 inches diameter).....	201	41	00	 17.95 meters.
Nail in blaze in cedar tree (10 inches diameter).....	288	22	20	 6.70 meters.
Nail in blaze in cedar tree (6 inches diameter).....	315	02	00	 8.40 meters.
Near peak of house.....	355	30	..	 $\frac{1}{4}$ mile.

LANEY.

General locality.—Southeastern shore of Little Choptank River on southwestern side of entrance to Fishing Creek on the northeast end of McKeils Point. (See Chart No. 37.)

Immediate locality.—Observed station is on a marsh point 35 yards southeast of shore, 50 yards northwest of shore, and 35 yards south-southwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

nces.—	°	'	"	
"Mac" (S 77° 08' W)	0	00	00	1/4 mile.
Chimney of house	34	50		2 miles.
Near peak of barn	54	23		1 mile.
Left chimney of house	83	48		1 1/8 miles.
Center of roof of bungalow on Cherry Island	112	23		1 1/8 miles.
"Cherry Island Water Tank"	113	38	30	1 1/4 miles.
Near peak of barn	152	37		5/8 mile.
Right chimney of house	231	03		1 3/4 miles.
Cupola on barn	247	50		1 1/8 miles.
Near chimney of house	273	13		1/4 mile.

MAC.

General locality.—Southeastern shore of Little Choptank River on northeast side of Tobacco Stick Bay on McKeils Point. (See Chart No. 37.)

Immediate locality.—Observed station is on west side of McKeils Point about 3 feet above high water, 16 yards east of edge of bank, 20 yards southeast of edge of bank, 25 yards northeast of edge of bank, and 150 yards south-southwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Madison Southern M. E. Church Spire" (S 4° 37' E).....	0	00	00	1½ miles.
Spire of M. P. Church at Madison.....	1	28	10	1½ miles.
Tangent of Casons Point.....	89	42	..	1½ miles.
Center chimney of house.....	103	58	..	2¾ miles.
Near peak of house.....	113	03	..	1½ miles.
Chimney on center of house.....	117	11	..	1½ miles.
Near peak of large barn.....	140	40	..	1½ miles.
Near peak of barn.....	147	24	..	1½ miles.
Near peak of barn.....	151	55	..	1 mile.
Left chimney of house.....	155	45	..	1 mile.
Center of near side of roof of bungalow on Cherry Island.....	203	35	..	1¾ miles.
Right chimney of house.....	242	57	..	¾ mile.
Near corner of house.....	302	24	..	¾ mile.

MADISON SOUTHERN M. E. CHURCH SPIRE.

General locality.—Southern shore of Little Choptank River in the town of Madison at the head of Tobacco Stick Bay. (See Chart No. 37.)

Immediate locality.—Observed station is on structure known as Southern M. E. Church, which is the tallest of three spires in the town of Madison.

Marks.—Observed station is spire on Southern M. E. Church.

References.—None necessary.

TOBACCO STICK.

General locality.—Southern shore of Little Choptank River on the northern end of point between Woolford Creek and Tobacco Stick Bay. (See Chart No. 37.)

Immediate locality.—Observed station is about in the center of a shell pile near end of point about 1 foot above high water, 13 yards southeast of shore, 14 yards south of shore, and 30 yards southwest of shore. Cement monument marking reference station is 21.35 meters S 29° 34' E of observed station and about in range with Madison Southern M. E. Church Spire. Four-inch tile pipe marking old reference station is 2.84 meters N 76° 30' E of observed station.

Marks.—Observed station is nail in 6-inch cedar stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Old reference station is 4-inch tile pipe set in cement.

References.—

	°	'	"	
"Madison Southern M. E. Church Spire" (S 29° 53' E).....	0	00	00	1¾ miles.
NEW REFERENCE STATION (CEMENT MONUMENT).....	0	18	10	21.35 meters.
Right end of roof of cannery.....	8	49	..	1 mile.
Tangent of James Point.....	122	14	..	5½ miles.
Chimney on left end of house.....	165	56	..	1½ miles.
Chimney on left end of house.....	189	40	..	3 miles.
Near peak of barn.....	211	16	..	1½ miles.
"Cherry Island Water Tank".....	234	58	50	2¾ miles.
Tangent of McKeils Point.....	240	46	..	1 mile.
OLD REFERENCE STATION (TILE PIPE).....	286	22	50	2.84 meters.
Near peak of old barn.....	344	51	..	2 miles.

WOOL.

General locality.—Southeastern shore of Little Choptank River on Susquehanna Point $\frac{1}{4}$ mile west of entrance to Woolford Creek. (See Chart No. 37.)

Immediate locality.—Observed station is on sand and marsh land about 1 foot above high water, 10 yards south of shore, 17 yards southwest of shore, and 22 yards east of shore. Cement monument marking reference station is 24.03 meters S $18^{\circ} 12'$ E of observed station. Four-inch tile pipe marking old reference station is 27.12 meters S $58^{\circ} 31'$ W of observed station.

Marks.—Observed station is nail in center of 4-inch tile pipe set in cement with top flush with surface of ground. Reference station is center of point of triangle on standard cement monument projecting 4 inches above surface of ground. Old reference station is nail in center of 4-inch tile pipe set in cement projecting about 3 inches above surface of ground.

References.—

	°	'	"	
"Veith" (S $55^{\circ} 49'$ W).....	0	00	00	2 $\frac{3}{8}$ miles.
OLD REFERENCE STATION (TILE PIPE).....	2	41	30	27.12 meters.
Near peak of large house on Hooper Point...	3	25	..	2 $\frac{1}{2}$ miles.
Near peak of house.....	26	27	..	4 $\frac{3}{8}$ miles.
Tangent of northeast end of James Island....	39	27	..	4 $\frac{3}{4}$ miles.
Right chimney of house.....	70	08	..	2 miles.
Left chimney of 1 $\frac{1}{2}$ -story house.....	106	10	..	1 $\frac{1}{4}$ miles.
Near peak of barn.....	136	18	..	2 $\frac{1}{8}$ miles.
Left chimney of house.....	147	47	..	2 miles.
"Cherry Island Water Tank".....	159	33	00	3 $\frac{1}{4}$ miles.
Right chimney of house.....	285	27	..	$\frac{1}{2}$ mile.
NEW REFERENCE STATION (CEMENT MONU- MENT).....	285	58	40	24.03 meters.

POV.

General locality.—Southern shore of Little Choptank River on extreme end of point about $\frac{1}{4}$ mile north of entrance to Parsons Creek about 2 miles south-southeast of Ragged Island, and $1\frac{1}{4}$ miles east of Hooper Point. (See Charts Nos. 37 and 38.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 4 yards south of shore, 4 yards southeast of shore, and 8 yards southwest of shore. Tile pipe marking old reference station is 64.66 meters S $65^{\circ} 17'$ E of observed station. Cement monument marking new reference station is 31.15 meters S $23^{\circ} 40'$ E of observed station.

Marks.—Observed station is center of 4-inch tile pipe projecting 12 inches above surface of ground. Old reference station is nail in center of 4-inch tile pipe set in cement. New reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Hudson" (N $19^{\circ} 04'$ E).....	0	00	00	2 $\frac{3}{8}$ miles.
Chimney on near peak of house.....	60	38	..	$\frac{3}{8}$ mile.
Chimney on right end of same house.....	61	49	..	$\frac{3}{8}$ mile.
Right chimney of house.....	95	10	..	$\frac{1}{4}$ mile.
OLD REFERENCE STATION (TILE PIPE).....	95	39	20	64.66 meters.
Near peak of barn.....	100	50	..	$\frac{1}{4}$ mile.
NEW REFERENCE STATION (MONUMENT)....	137	15	40	31.15 meters.
Near peak of large house.....	246	47	..	1 $\frac{1}{2}$ miles.
Near peak of house.....	258	48	..	4 miles.
Chimney of house.....	263	44	..	4 miles.
Chimney on left end of house.....	328	17	..	2 $\frac{3}{4}$ miles.
Left side of 1 $\frac{1}{2}$ -story house.....	352	08	..	2 $\frac{3}{8}$ miles.

NOBLEE.

General locality.—Eastern side of Slaughter Creek about $\frac{1}{2}$ mile northeast of Slaughter Creek Bridge, and $\frac{1}{8}$ mile inshore. (See Chart No. 38.)

Immediate locality.—Observed station is in edge of cultivated field on south side of road leading from Madison to Taylor Island, about 250 yards east of shore, 3 yards south of wire fence between field and road, 85 yards west-southwest of farm boundary stone in fence corner near road, and 135 yards east-northeast of barn on same side of road as station.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Finish" (S $14^{\circ} 52'$ W).....	0	00	00	$\frac{5}{8}$ mile.
Near peak of barn.....	7	23	..	$\frac{1}{8}$ mile.
Right chimney of house.....	13	22	..	$\frac{1}{8}$ mile.
Center of canning house ventilators.....	19	39	..	$\frac{3}{8}$ mile.
Center of draw of Slaughter Creek Bridge....	33	58	..	$\frac{1}{2}$ mile.
Near peak of Taylor Island wharf house....	36	18	..	$\frac{1}{2}$ mile.
Near peak of store at Taylor Island.....	42	16	..	$\frac{3}{8}$ mile.
Near peak of barn.....	44	41	..	135 yards.
Nail in blaze in cedar tree (4 inches diameter).....	65	07	30	15.98 meters.
Near chimney of house.....	99	02	..	250 yards.
Spindle on barn cupola.....	116	56	..	250 yards.
Near chimney of house.....	175	04	..	$\frac{5}{8}$ mile.
Near peak of house.....	201	47	..	1 mile.
Middle chimney of house.....	315	01	..	$\frac{1}{4}$ mile.

FINISH.

General locality.—Eastern shore of Slaughter Creek about $\frac{3}{8}$ mile southeast of Slaughter Creek Bridge. (See Chart No. 38.)

Immediate locality.—Observed station is in corner of cultivated field, about 50 yards east of shore, 12 yards east of wire fence between field and marsh, 14 yards north of wire fence between field and woods, and 17 yards northeast of fence corner.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Taylor" (S $87^{\circ} 18'$ W).....	0	00	00	$\frac{3}{8}$ mile.
Taller stack of canning house at Taylor Island.	21	10	..	$\frac{1}{2}$ mile.
Near peak of large dwelling at Taylor Island.	29	09	..	$\frac{1}{2}$ mile.
Left chimney of house nearest Slaughter Creek Bridge.....	36	42	..	$\frac{1}{2}$ mile.
Near peak of Taylor Island wharf house....	49	57	..	$\frac{3}{8}$ mile.
Center of draw of Slaughter Creek Bridge....	51	00	..	$\frac{3}{8}$ mile.
Near peak of old canning house.....	82	10	..	$\frac{3}{8}$ mile.
Near peak of barn.....	105	31	..	$\frac{5}{8}$ mile.
Nail in blaze in pine tree (8 inches diameter).	225	56	10	20.18 meters.
Nail in blaze in pine tree (12 inches diameter)	246	19	10	16.15 meters.
Nail in blaze in pine tree (8 inches diameter).	294	38	50	19.55 meters.

TAYLOR.

General locality.—Western shore of Slaughter Creek about $\frac{1}{4}$ mile south of Slaughter Creek Bridge. (See Chart No. 38.)

Immediate locality.—Observed station is on hard land at edge of marsh about 1 foot above high water, 22 yards northwest of shore, 28 yards southwest of shore, and 29 yards west of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Harrington" (N 2° 37' E).....	0	00	00	 $\frac{3}{4}$ mile.
Left side of Taylor Island wharf house.....	8	46	..	 $\frac{1}{4}$ mile.
Spindle on cupola on barn.....	23	35	..	 $\frac{3}{4}$ mile.
Near peak of barn.....	30	50	..	 $\frac{3}{4}$ mile.
Near peak of old canning house.....	37	40	..	 $\frac{3}{8}$ mile.
Left chimney of large house.....	38	34	..	 $\frac{1}{2}$ mile.
Near peak of barn.....	50	14	..	 $\frac{5}{8}$ mile.
Nail in blaze in pine tree (5 inches diameter).....	180	39	30	 10.27 meters.
Nail in blaze in pine tree (5 inches diameter).....	252	27	30	 5.83 meters.
Near peak of house.....	275	43	..	 $\frac{3}{8}$ mile.
Taller stack of canning house at Taylor Island.....	311	10	..	 $\frac{3}{8}$ mile.
Left chimney of house nearest Slaughter Creek Bridge.....	344	59	..	 $\frac{1}{4}$ mile.
Nail in blaze in pine tree (4 inches diameter).....	302	46	40	 4.35 meters.

HARRINGTON.

General locality.—Western shore of Slaughter Creek about $\frac{3}{8}$ mile north of Slaughter Creek Bridge. (See Chart No. 38.)

Immediate locality.—Observed station is on a marsh point at south side of entrance to a creek about on level with high water, 20 yards southwest of shore, 26 yards northwest of shore, 27 yards west of extreme end of point, and 300 yards southeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Whitewash" (N 22° 53' E).....	0	00	00	 $\frac{7}{8}$ mile.
Chimney on near end of house.....	24	52	..	 $\frac{3}{4}$ mile.
Spindle on cupola on barn.....	60	29	..	 $\frac{3}{8}$ mile.
Near peak of barn.....	81	00	..	 $\frac{1}{2}$ mile.
Near peak of barn.....	115	46	..	 $\frac{3}{8}$ mile.
Near peak of old canning house.....	124	48	..	 $\frac{1}{2}$ mile.
Center of draw of Slaughter Creek Bridge....	149	55	..	 $\frac{3}{8}$ mile.
Near gable of house nearest west end of Slaughter Creek Bridge.....	169	26	..	 $\frac{1}{2}$ mile.
Taller stack of canning house at Taylor Island.....	181	26	..	 $\frac{1}{2}$ mile.
Left chimney of house.....	282	29	20	 300 yards.

TRAVERS 2.

General locality.—Eastern shore of Chesapeake Bay on western side of Taylor Island about 4 miles south of James Point. (See Chart No. 38.)

Immediate locality.—Observed station is about 4 feet above high water in a field which was once under cultivation but is now covered with water bushes, about 40 yards east of shore and 15 feet north of a wire fence which starts at the shore and runs east. A stone used as an old reference mark stands 9.41 meters N 26° 53' E of observed station, and the cement monument marking new reference station is 9.52 meters N 77° 20' W of observed station.

Marks.—Observed station is a granite post projecting above the ground with crosslines running approximately north to south and east to west. New reference station is center point of triangle on standard cement monument. Old reference station is a cross on a granite post projecting above the ground with one of the crosslines running in the direction of Cove Point Light.

References.—

	°	'	"	
"Cove Point Light" (S 26° 15' W).....	0	00	00	 6½ miles.
Governors Run Wharf.....	77	12	..	 9½ miles.
Tangent of woods at water's edge.....	123	40	..	 ½ mile.
Near peak of 2-story house.....	173	23	..	 ¼ mile.
OLD REFERENCE STONE (GRANITE POST).....	180	38	20	 9.41 meters.
Chimney of 1½-story house.....	195	47	..	 ¼ mile.
NEW REFERENCE STATION (CEMENT MONU- MENT).....	256	24	50	 9.52 meters.
Near corner of small cabin.....	271	32	..	 ¼ mile.
Near chimney of house among trees.....	300	54	..	 ½ mile.
Near peak of small house.....	304	54	..	 ¾ mile.

DUNNOCK.

General locality.—Eastern shore of Chesapeake Bay about 5¼ miles east of Cove Point Light, and 2¾ miles north-northwest of north end of Barren Island. (See Chart No. 38.)

Immediate locality.—Observed station is on a marsh about 1 foot above high water, 70 yards from shore in line with Cedar Point Light, 108 yards from shore in line with Cove Point Light, and 250 yards from a clump of woods at shore known locally as "Cattle Island Woods." Cement monument marking reference station is 35.18 meters N 88° 14' E of observed station and nearly in line with Cove Point Light.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Cedar Point Light" (S 36° 47' W).....	0	00	00	 7½ miles.
Roof of house.....	43	41	..	 6 miles.
Flagstaff at Cove Point Light.....	51	21	..	 5¼ miles.
"Cove Point Light".....	51	33	40	 5¼ miles.
"Point of Rocks".....	67	13	10	 7¼ miles.
Near peak of barn.....	168	39	..	 ½ mile.
Chimney of house.....	172	34	..	 ½ mile.
REFERENCE STATION.....	231	26	40	 35.18 meters.
Peak of barn.....	241	08	..	 1¼ miles.
Chimney of house.....	256	20	..	 1½ miles.

COVE POINT LIGHT.

General locality.—Western shore of Chesapeake Bay on Cove Point about 5 miles north of entrance to Patuxent River. (See Chart No. 38.)

Immediate locality.—Observed station is on tower known as "Cove Point Light," which is near a detached dwelling and a detached fog-signal house.

Marks.—Observed station is center point of lantern on Cove Point Light.

References.—

"Cedar Point Light" (S $7^{\circ} 16'$ E)..... 0 00 00 6 miles.

POINT OF ROCKS.

General locality.—Western shore of Chesapeake Bay on Point of Rocks, about $2\frac{3}{4}$ miles northwest of Cove Point Light. (See Chart No. 38.)

Immediate locality.—Observed station is in dense woods on a bluff about 90 feet high, 5 yards west of edge at extreme point, 8 yards south of edge of bluff, and 5 yards northwest of edge of bluff. Cement monument marking reference station is 9.42 meters S $66^{\circ} 44'$ W of observed station.

Marks.—Observed station is nail in center of round stake 4 inches in diameter with top flush with surface of ground driven into a 6-inch tile pipe with top 6 inches below surface of ground. Subsurface mark was reported in 1898 as a 6-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

"Cove Point Light" (S $43^{\circ} 26'$ E).....	0	00	00	.....	$2\frac{3}{4}$ miles.
Center nail in blaze of tree (13 inches diameter).....	19	19	40	.....	5.64 meters.
Center nail in blaze of tree (13 inches diameter).....	00	05	30	.....	5.62 meters.
REFERENCE STATION.....	110	09	30	.....	9.42 meters.
Nail in blaze in tree (9 inches diameter).....	126	35	40	.....	4.16 meters.
Right tangent Governors Run Wharf.....	186	20	20	.....	$7\frac{1}{2}$ miles.
Tangent of main woods.....	249	57	..	.....	$8\frac{1}{2}$ miles.
Left peak of large house.....	297	45	20	.....	6 miles.
North peak of large house.....	312	17	30	.....	$6\frac{3}{4}$ miles.

CEDAR POINT LIGHT.

General locality.—Western shore of Chesapeake Bay on Cedar Point at south side of entrance to Patuxent River, about $3\frac{1}{4}$ miles east-southeast of Drum Point Light and 6 miles south by east of Cove Point Light. (See Chart No. 39.)

Immediate locality.—Observed station is on a square tower on a square brick dwelling known as Cedar Point Lighthouse.

Marks.—Observed station is center point of lantern on Cedar Point Lighthouse.

References.—

"Cove Point Light" (N $7^{\circ} 16'$ W)..... 0 00 00 6 miles.

HOOPER ISLAND LIGHT.

General locality.—Eastern side of Chesapeake Bay offshore about $3\frac{1}{2}$ miles west of Hoopers Island, and 4 miles south of Barren Island. (See Chart No. 39.)

Immediate locality.—Observed station is on Hoopers Island Lighthouse.

Marks.—Observed station is center point of lantern on conical tower on cylindrical foundation, known as Hooper Island Lighthouse.

References.—

"Cedar Point Light" (N $65^{\circ} 04'$ W)..... 0 00 00 7 miles.

SOUTH.

General locality.—Eastern side of Chesapeake Bay on western shore of Barren Island, about $4\frac{3}{4}$ miles north of Hooper Island Light and 6 miles east of Cedar Point Light. (See Chart No. 39.)

Immediate locality.—Observed station is on sandy marsh about 1 foot above high water and 4 yards east of rapidly washing shore. Cement monument marking reference station is 101.21 meters N $72^{\circ} 40'$ E of observed station.

Marks.—Observed station is nail in cedar stub about 8 inches in diameter and 4 feet long with top projecting about 20 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. "South Secondary" is marked the same as the observed station except top was badly burned, only projecting 3 inches above surface of ground.

References.—

	°	'	"	
"Hooper Island Light" (S $8^{\circ} 10'$ E)	0	00	00	$4\frac{3}{4}$ miles.
"Cedar Point Light"	80	50	20	6 miles.
Tangent to Hog Point	90	00	..	$7\frac{1}{2}$ miles.
"Cove Point Light"	131	08	10	$7\frac{3}{4}$ miles.
Tangent of shore north of station	170	00	..	1 mile.
REFERENCE STATION (CEMENT MONUMENT)	260	50	50	101.21 meters.
"SOUTH SECONDARY" (CEDAR STUB)	260	50	50	100.25 meters.
Left chimney of house	301	39	..	$2\frac{1}{2}$ miles.
Dead pine tree	346	57	..	90 yards.

NORTH.

General locality.—Eastern side of Chesapeake Bay on western shore of Barren Island about $\frac{3}{8}$ mile south of north end of island and 7 miles east-southeast of Cove Point Light. (See Chart No. 39.)

Immediate locality.—Observed station is on hard land surrounded by water bushes and scrub pines about 2 feet above high water, and 50 yards east-southeast of point where three large pine trees stand near shore. Cement monument marking reference station is 48.71 meters N $72^{\circ} 39'$ E of observed station.

Marks.—Observed station is center one of four nails in cedar stub 8 inches in diameter and 4 feet in length with top projecting about 8 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Station called "North Secondary" is marked the same as the observed station except the top of cedar post is about 18 inches above surface of ground.

References.—

	°	'	"	
"Cove Point Light" (N $64^{\circ} 08'$ W)	0	00	00	7 miles.
Near peak of house	54	47	..	$2\frac{7}{8}$ miles.
Nail in blaze in pine tree (6 inches diameter)	74	57	50	8.18 meters.
Nail in blaze in pine tree (8 inches diameter)	116	17	20	14.15 meters.
Nail in blaze in pine tree (5 inches diameter)	132	36	10	9.99 meters.
REFERENCE STATION (CEMENT MONUMENT)	136	47	00	48.71 meters.
NORTH SECONDARY (CEDAR STUB)	136	47	00	49.95 meters.
Nail in blaze in pine tree (5 inches diameter)	186	10	20	5.98 meters.
"Cedar Point Light"	306	08	30	$6\frac{1}{4}$ miles.

MINT.

General locality.—Eastern shore of Tar Bay on Charity Point at north side of entrance to Fishing Creek, about $\frac{3}{8}$ mile west of Fishing Creek bridge, and $1\frac{5}{8}$ miles east of north end of Barren Island. (See Chart No. 39.)

Immediate locality.—Observed station is on shell bank about 4 feet above high water, 2 yards east of shore, 11 yards southwest of small wild cherry tree, 13 yards west-southwest of another small wild cherry tree, and just west of a dense growth of small trees and brush. Cement monument marking reference station is 21.85 meters N $52^{\circ} 05'$ E of observed station.

Survey of Oyster Bars, Dorchester County, Md.

Marks.—Observed station is center of 4-inch tile pipe with top 7 inches below surface of ground. Subsurface mark is center of 4-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Hosier Memorial Church Spire" (S 21° 24' E)	0	00	00	1½ miles.
"Mt. Zion M. E. Church Spire".....	6	41	50	2½ miles.
Chimney on middle of house.....	7	52	..	1½ miles.
"Hooper Island Light".....	27	22	10	6¼ miles.
Near peak of house.....	58	05	..	1½ miles.
Chimney on outside of near end of 2-story house.....	64	06	..	1½ miles.
Chimney of shanty.....	72	50	..	1½ miles.
Tangent of north end of Barren Island.....	112	00	..	1½ miles.
Red Beacon.....	122	25	20	1½ miles.
Black Beacon.....	123	37	40	1½ miles.
"Cove Point Light".....	130	29	40	8¼ miles.
Left tangent of Cattle Island woods.....	160	00	..	4 miles.
Nail in blaze in wild cherry tree (3 inches diameter).....	233	20	00	10.34 meters.
REFERENCE STATION.....	253	28	50	21.85 meters.
Nail in blaze in wild cherry tree (5 inches diameter).....	266	50	10	11.86 meters.
Left chimney of large 2-story house.....	356	07	..	¾ mile.

KEENES.

General locality.—Eastern shore of Honga River on Keenes Point, about 1¼ miles north-northeast of Fishing Creek Bridge and ¾ mile east of Cedar Point. (See Charts Nos. 39 and 40.)

Immediate locality.—Observed station is on marsh with dense growth of water bushes alongshore, about 1 foot above high water, 20 yards north of shore, 30 yards east of shore, and 35 yards south of cultivated land.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Kerwin" (S 79° 28' E).....	0	00	00	1½ miles.
Near peak of barn.....	159	38	..	1 mile.
Chimney on right end of house.....	161	04	..	1 mile.
Near peak of barn.....	196	20	..	2 miles.
Left tangent of trees along edge of cultivated land.....	211	00	..	65 yards.
Center one of group of three large pine trees..	282	14	..	½ mile.
Right tangent of trees along edge of cultivated land.....	344	00	..	60 yards.

GUNNERS.

General locality.—Western shore of Honga River on Gunners Island on point at northern side of entrance to Gunners Cove, about ¾ mile north of Long Point and 1¼ miles southeast of Fishing Creek Bridge. (See Charts Nos. 39 and 40.)

Immediate locality.—Observed station is on a marsh with water bushes alongshore, about 1 foot above high water, 23 yards southwest of shore, 28 yards south of shore, 70 yards northwest of extreme end of point, and 170 yards northeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting about 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Kerwin" (N 38° 20' E).....	0	00	00	 2 miles.
Near peak of barn.....	52	33	..	 2½ miles.
Chimney on left end of house.....	78	15	..	 2 miles.
Right tangent to Wroten Island.....	112	37	..	 1¾ miles.
Center of draw of bridge.....	134	43	..	 2⅞ miles.
"Mount Zion M. E. Church Spire".....	170	44	30	 1¾ miles.
Left edge of house.....	239	35	..	 1¾ miles.
Near peak of house.....	247	12	..	 1¾ miles.
Center of draw of Fishing Creek Bridge.....	274	40	..	 1¾ miles.
Right edge of old windmill.....	275	13	..	 1¼ miles.
Near peak of small house.....	279	50	..	 1¼ miles.

HOSIER MEMORIAL CHURCH SPIRE.

General locality.—Eastern shore of Tar Bay on Upper Hooper Island, about 5⅜ miles north by east of Hooper Island Light and 1 mile south of Fishing Creek. (See Charts Nos. 39 and 40.)

Immediate locality.—Observed station is on church known as Hosier Memorial Church.

Marks.—Observed station is center of spire.

References.—None necessary.

MOUNT ZION M. E. CHURCH SPIRE.

General locality.—Eastern shore of Tar Bay on Upper Hooper Island, about 1¾ miles northwest of Ferry Point and 2 miles south of entrance to Fishing Creek. (See Charts Nos. 39 and 40.)

Immediate locality.—Observed station is on a church known as Mount Zion M. E. Church.

Marks.—Observed station is center of spire on Mount Zion M. E. Church.

References.—None necessary.

BRIDGE.

General locality.—Eastern shore of Chesapeake Bay and western shore of Honga River on Ferry Point at southern end of Upper Hooper Island, about 3¾ miles northeast by north of Hooper Island Light. (See Charts Nos. 39 and 40.)

Immediate locality.—Observed station is on a marsh point, about 1 foot above high water, 50 yards west of river shore, 55 yards south of river shore, 85 yards east of shore of bay, 75 yards northeast by north of second telephone pole north of bridge, and 80 yards north-northeast of bridge tender's cabin.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mount Zion M. E. Church Spire" (N 44°				
47' W).....	0	00	00	 1¾ miles.
Near peak of oyster house.....	13	28	..	 1½ miles.
"Hosier Memorial Church Spire".....	14	59	00	 2½ miles.
Left tangent of Wroten Island.....	58	12	..	 2 miles.
Near peak of barn.....	68	33	..	 1½ miles.
Center of roof of old windmill.....	122	20	..	 3¾ miles.
Outside chimney of right end of house.....	164	03	..	 1 mile.
Chimney in center of large house.....	171	15	..	 1¾ miles.
Chimney in center of house.....	185	25	..	 2 miles.
"Hooper Island Light".....	262	51	50	 3¾ miles.

APPLEGARTH.

General locality.—Eastern shore of Chesapeake Bay on south end of Hooper Island, about 3½ miles east of Hooper Strait Light. (See Chart No. 40.)

Immediate locality.—Observed station is on marsh, about 1 foot above high water and 150 yards north of shore.

Survey of Oyster Bars, Dorchester County, Md.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hooper Strait Light" (S 83° 45' E).....	0	00	00	3½ miles.
"Point no Point Light".....	132	34	10	10½ miles.
"Hooper Island Light".....	189	11	30	6 miles.
Left one of row of large pine trees.....	192	20	..	⅓ mile.
"Hoopersville Methodist Church Cupola"....	214	53	30	2⅞ miles.
Chimney of house.....	230	05	..	¾ mile.
Chimney in middle of house.....	246	47	..	¾ mile.
"Hopkins Memorial Church Cupola".....	257	45	00	¾ mile.
Chimney in center of house.....	259	52	..	¾ mile.
Chimney of abandoned house.....	271	25	..	½ mile.
Near peak of house showing over roof.....	278	06	..	½ mile.
Right tangent of clump of pine trees.....	295	33	..	300 yards.

HOPKINS MEMORIAL CHURCH CUPOLA.

General locality.—Eastern shore of Chesapeake Bay in small village of Applegarth on Lower Hooper Island, about 2⅓ miles southeast by east of Hooper Island Wharf, and 3¼ miles east-southeast of Hooper Strait Light. (See Chart No. 40.)

Immediate locality.—Observed station is on church known as Hopkins Memorial Church.

Marks.—Observed station is center of bell cupola.

References.—None necessary.

HOOPERSVILLE METHODIST CHURCH CUPOLA.

General locality.—Eastern shore of Chesapeake Bay in town of Hoopersville on Middle Hooper Island, about ¼ mile southwest of Hooper Island Wharf. (See Chart No. 40.)

Immediate locality.—Observed station is on church known as Hoopersville Methodist Church.

Marks.—Observed station is center of bell cupola.

References.—None necessary.

BENTLEY.

General locality.—Southwestern shore of Honga River on the north side of Bentley Point about 2 miles south of Wroten Island, and 1½ miles east of drawbridge at Ferry Point. (See Chart No. 40.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 30 yards southwest of shore, 45 yards east of shore, and 50 yards southeast by south of a small marsh point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hoopersville M. E. Church Cupola" (S 3° 29' W).....	0	00	00	2¼ miles.
Near peak of house.....	9	38	..	⅞ mile.
Center of draw of Hooper Island bridge.....	97	12	..	1½ miles.
Peak of draw-tender's cabin.....	99	26	..	1⅝ miles.
"Mount Zion M. E. Church Spire".....	116	08	50	3⅞ miles.
Near peak of oyster house.....	120	37	..	4¼ miles.
Near peak of large house.....	125	37	..	3¼ miles.
Left tangent to Wroten Island.....	142	00	..	1⅞ miles.
Right edge of barn.....	151	40	..	1¾ miles.
Left chimney of house.....	171	32	..	2⅞ miles.
Center of old windmill.....	236	48	..	2½ miles.
"Hopkins Memorial Church Cupola".....	326	59	40	4 miles.
Stack of oyster house at Hooper Island Wharf.	347	51	..	2½ miles.

KERWIN.

General locality.—Northeastern shore of Honga River about $2\frac{1}{4}$ miles east-northeast of Fishing Creek Bridge, and $1\frac{1}{2}$ miles east of Keenes Point. (See Chart No. 40.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 60 yards east of shore, 60 yards northwest of shore, and 55 yards north-northeast of end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

		°	'	"	
"Mount Zion M. E. Church Spire" (S 34°	04' W)	0	00	00	 $3\frac{1}{8}$ miles.
"Hosier Memorial Church Spire".....	14	29	00	.....	3 miles.
Chimney on outside of end of house.....	29	01	..	.....	3 miles.
Right chimney of house.....	31	37	..	.....	$2\frac{1}{4}$ miles.
Center of draw of Fishing Creek Bridge.....	35	32	..	.....	$2\frac{1}{4}$ miles.
Stack of Fishing-Creek Crab House.....	36	26	..	.....	$2\frac{1}{4}$ miles.
Center of old windmill on Fishing Creek.....	37	02	..	.....	$2\frac{1}{4}$ miles.
Tangent of woods.....	70	14	..	.....	250 yards.
Stove pipe on left edge of house.....	163	11	..	.....	1 mile.
Near chimney of house.....	230	31	..	.....	$\frac{1}{8}$ mile.
Center of draw of Hooper Island Bridge.....	337	43	..	.....	$4\frac{1}{8}$ miles.

WROTEN.

General locality.—Northeastern shore of Honga River on southern shore of Wroten Island about $2\frac{1}{2}$ miles north-northwest of Bentley Point. (See Chart No. 40.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 40 yards west of shore, 55 yards northwest of shore, and 100 yards north of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

		°	'	"	
"Charles" (S 65° 22' E).....	0	00	00	.....	$1\frac{1}{4}$ miles.
Chimney on right end of house.....	78	32	..	.....	$2\frac{3}{8}$ miles.
Center of draw of Hooper Island Bridge.....	98	49	..	.....	2 miles.
"Mount Zion M. E. Church Spire".....	144	29	50	.....	$2\frac{1}{4}$ miles.
Right edge of house in trees.....	161	54	..	.....	$\frac{5}{8}$ mile.
Near peak of barn.....	174	13	..	.....	$\frac{3}{8}$ mile.
Near peak of house.....	270	56	..	.....	$\frac{3}{4}$ mile.
Chimney on left end of house.....	321	04	..	.....	$1\frac{1}{2}$ miles.

CHARLES.

General locality.—Northeastern shore of Honga River about $1\frac{3}{4}$ miles north of Bentley Point, and $2\frac{1}{2}$ miles east-northeast of drawbridge at Ferry Point. (See Chart No. 40.)

Immediate locality.—Observed station is on firm land about 1 foot above high water, 20 yards east-southeast of shore, 30 yards northwest of shore, 50 yards north-northeast of shore, and 40 yards southwest by south of large tree near bend in a rail fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Lakes" (S 70° 54' E).....	0	00	00	1 mile.
Left edge of barn roof.....	33	11	..	2¼ miles.
"Hopkins Memorial Church Cupola".....	56	20	10	5½ miles.
Center of draw of Hooper Island Bridge.....	133	10	..	2½ miles.
Left edge of drawtender's cabin.....	134	47	..	2½ miles.
Chimney on right end of house.....	154	55	..	3 miles.
"Mount Zion M. E. Church Spire".....	162	11	20	3½ miles.
Left peak of oyster house.....	162	18	..	3¼ miles.
Tangent of south end of Wroten Island.....	162	52	..	1½ miles.
Chimney on left end of house.....	166	07	..	1½ miles.
Chimney on end of house.....	170	05	..	1¾ miles.
Nail in blaze in tree (6 inches diameter).....	322	22	10	19.93 meters.
Nail in blaze in tree (6 inches diameter).....	248	59	50	12.63 meters.

LAKES.

General locality.—Northeastern shore of Honga River on a point at northern side of entrance to Lakes Cove about 1½ miles north-northeast of Bentley Point. (See Chart No. 40.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 26 yards north of shore, 65 yards northeast of shore, and 70 yards east of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Asquith" (S 6° 08' W).....	0	00	00	1¾ miles.
"Mount Zion M. E. Church Spire".....	89	20	50	4¾ miles.
Chimney on outside of house.....	182	40	..	¾ mile.
Between two dormer windows of house.....	242	00	..	1¾ miles.
Left chimney of house.....	273	34	..	¾ mile.

ASQUITH.

General locality.—Eastern shore of Honga River on Asquith Island, about 2½ miles northeast of Hoopersville, and ¾ mile north of Windmill Point. (See Chart No. 40.)

Immediate locality.—Observed station is on strip of sandy marsh between a pond and river about 2 feet above high water, 3 yards west of shore of pond, 11 yards east of shore of river, and 50 yards south of end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe with top about 2 inches below base of monument.

References.—

	°	'	"	
"Hoopersville Methodist Church cupola" (S 44° 57' W).....	0	00	00	2¼ miles.
Near peak of house.....	4	12	..	2 miles.
Near peak of barn.....	9	06	..	2¼ miles.
Near peak of small barn.....	38	24	..	1¾ miles.
Nail in blaze in pine tree (15 inches diam- eter).....	87	59	40	6.04 meters.
Left side of old windmill.....	154	51	..	2 miles.
Near peak of house.....	157	50	..	2½ miles.
Nail in blaze in pine tree (12 inches diam- eter).....	320	06	10	17.08 meters.
Nail in blaze in pine tree (15 inches diam- eter).....	336	50	00	7.48 meters.
Tangent to outside end of Hooper Island wharf.....	352	20	..	1¾ miles.

WINDMILL 2.

General locality.—Eastern shore of Honga River on Windmill Point, about $1\frac{7}{8}$ miles east-northeast of Hoopersville. (See Chart No. 40.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 25 yards north-northeast of end of point, 35 yards east of shore, and 30 yards northwest of shore. Cement monument marking reference station is 19.78 meters N $36^{\circ} 41'$ E of observed station.

Marks.—Observed station is nail in stub in 4-inch tile pipe with top of pipe 4 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	0	1	2	3	4	5	6	7	8	9	
"Hoopersville Methodist Church Cupola" (S $64^{\circ} 22'$ W).....	0	00	00	.....	1	7	8	.....	miles.		
Two house chimneys about in line.....	1	24	..	.....	1	3	8	.....	miles.		
Center of store doorway in Hoopersville.....	3	54	..	.....	1	3	8	.....	miles.		
Near peak of house.....	53	59	..	.....	2	.....	miles.				
"Mount Zion M. E. Church spire".....	61	25	40	.....	5	1	4	.....	miles.		
"Hosier Memorial Church Spire".....	68	09	30	.....	6	.....	miles.				
Tangent to Bentley Point.....	91	46	..	.....	1	1	4	.....	miles.		
Near gable of house.....	149	52	..	.....	1	1	2	.....	miles.		
REFERENCE STATION.....	152	19	10	.....	19	75	.....	meters.			
Near peak of cabin.....	183	42	..	.....	1	1	4	.....	miles.		
"Toddville M. E. Church Spire".....	184	01	20	.....	4	3	4	.....	miles.		
Center gable of house.....	185	00	..	.....	3	1	4	.....	miles.		
St. Thomas Church Spire".....	211	06	20	.....	4	1	4	.....	miles.		
Left tangent Hooper Island Wharf.....	356	25	..	.....	1	1	4	.....	miles.		

PAUL (HONGA RIVER).

General locality.—Eastern shore of Honga River on Paul Point at northwestern side of entrance to Fox Creek, about $1\frac{1}{2}$ miles east-northeast of Windmill Point, and $\frac{3}{4}$ mile southwest of Wingate Point. (See Chart No. 40.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 7 yards west of shore, 13 yards northwest of shore, 25 yards north-northeast of extreme end of point, 50 yards north-northwest of a small marsh island, and 55 yards east-northeast of a cabin.

Marks.—Observed station is center of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	0	1	2	3	4	5	6	7	8	9	
"St. Thomas Church Spire" (S $71^{\circ} 18'$ E)....	0	00	00	.....	3	.....	miles				
Left side of small cabin on Crab Point.....	32	05	..	.....	1	3	4	.....	miles.		
"Hopkins Memorial Church Cupola".....	91	26	30	.....	2	1	4	.....	miles.		
Between two stacks on oyster house on Hooper Island Wharf.....	136	08	..	.....	3	.....	miles.				
"Hoopersville Methodist Church Cupola".....	137	23	20	.....	3	1	4	.....	miles.		
Near corner of cabin.....	150	05	..	.....	53	.....	yards.				
Near peak of house.....	195	41	..	.....	1	.....	mile.				
Peak of barn.....	241	26	..	.....	2	.....	miles.				
Center one of three chimneys on large house.....	273	57	..	.....	1	1	4	.....	miles.		
Chimney of Wingate Wharf waiting room.....	304	38	..	.....	3	1	4	.....	miles.		
"Toddville M. E. Church Spire".....	319	46	00	.....	3	1	4	.....	miles.		
Flagstaff on hall at Bishop Head.....	359	29	..	.....	2	1	4	.....	miles.		

TODDVILLE M. E. CHURCH SPIRE.

General locality.—On neck of land between Fishing Bay and Honga River in town of Toddville, about $2\frac{1}{2}$ miles east of Wingate wharf. (See Chart No. 40.)

Immediate locality.—Observed station is on church known as Toddville M. E. Church.

Marks.—Observed station is center of spire.

References.—None necessary.

DUCK (HONGA RIVER).

General locality.—Eastern shore of Fox Creek on Piney Point, at north side of entrance to Duck Point Cove, about $\frac{3}{4}$ mile southeast of Wingate Point. (See Chart No. 40.)

Immediate locality.—Observed station is on a marsh point 1 foot above high water, 50 yards south of shore, 50 yards north of shore, and 65 yards east-northeast of end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"St. Thomas Church Spire" (S 63° 20' E).....	0	00	00	 1 $\frac{3}{4}$ miles.
Near peak of small cabin.....	75	13	..	 1 mile.
Left tangent of Hooper Island.....	88	10	..	 3 miles.
"Hopkins Memorial Church Cupola".....	104	51	00	 3 $\frac{1}{2}$ miles.
"Hoopersville Methodist Church Cupola".....	137	20	50	 4 $\frac{3}{8}$ miles.
Left chimney of house.....	158	40	..	 2 miles.
Left edge of cabin on Paul Point.....	159	29	..	 1 $\frac{1}{2}$ miles.
Tangent of outside end of Wingate Wharf.....	185	52	..	 $\frac{7}{8}$ mile.
Chimney on waiting room Wingate Wharf.....	186	26	..	 $\frac{7}{8}$ mile.
Front peak of store building.....	214	04	..	 $\frac{3}{4}$ mile.
Peak of oyster house.....	222	46	..	 $\frac{3}{4}$ mile.
Near gable of house.....	245	39	..	 1 mile.
Outside chimney of house.....	318	18	..	 1 $\frac{1}{4}$ miles.

ST. THOMAS CHURCH SPIRE.

General locality.—Eastern shore of Honga River in town of Bishop Head, about $2\frac{1}{2}$ miles southeast by east of Wingate Wharf, and $2\frac{3}{4}$ miles north of Hooper Strait Light. (See Chart No. 40.)

Immediate locality.—Observed station is on church known as St. Thomas Church.

Marks.—Observed station is center of spire.

References.—None necessary.

NORMAN.

General locality.—Eastern shore of Honga River, about $2\frac{1}{2}$ miles north-northwest of Hooper Strait Light, and $\frac{1}{2}$ mile south of Crab Point. (See Chart No. 40.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 60 yards east of shore, 70 yards northeast of shore, and 80 yards southeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Hooper Strait Light" (S 35° 11' E).....	0	00	00	 2 $\frac{1}{2}$ miles.
Right tangent of woods.....	12	00	..	 400 yards.
Left edge of small house.....	28	29	..	 5 $\frac{1}{4}$ miles.
Tangent of lower end of Hooper Island.....	76	12	..	 2 miles.
"Hopkins Memorial Church Cupola".....	99	57	20	 2 $\frac{1}{4}$ miles.
"Hoopersville M. E. Church Cupola".....	127	47	30	 4 $\frac{1}{8}$ miles.
Between two stacks on oyster house at Hoopers Island Wharf.....	130	27	..	 3 $\frac{3}{8}$ miles.
Left tangent of woods.....	184	14	..	 400 yards.
Front peak of store building.....	205	33	..	 2 $\frac{1}{2}$ miles.
Near peak of house.....	216	57	..	 3 miles.
Left one of two chimneys close together.....	248	22	..	 2 miles.
Near peak of canning house.....	250	36	..	 2 miles.
Flagstaff on hall at Bishop Head.....	284	30	..	 1 $\frac{3}{4}$ miles.
"St. Thomas Church Spire".....	285	07	50	 1 $\frac{3}{4}$ miles.

HOOPER STRAIT LIGHT.

General locality.—Northern side of Hooper Strait at eastern side of entrance to Honga River about 2½ miles west-northwest of southern end of Bishop Head, and 3 miles east-southeast of Lower Hooper Island. (See Chart No. 40.)

Immediate locality.—Observed station is on hexagonal, screw-pile structure known as Hooper Strait Light.

Marks.—Observed station is center of lantern on Hooper Strait Light.

References.—

"Head" (S 82° 30' E)..... 0 00 00 2½ miles.

CRAB.

General locality.—Western shore of upper Tangier Sound on eastern side of Bloodworth Island, about 1 mile southeast of entrance to Piney Island Cove, 1 mile northeast of entrance to Great Cove, and 2¾ miles southwest of Sharkfin Shoal Light. (See Chart No. 41.)

Immediate locality.—Observed station is about 1 foot above high water, 15 yards southwest of shore, 35 yards west of shore, and 150 yards south-southwest of a crab house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Sharkfin Shoal Light" (N 45° 25' E)..... 0 00 00 2¾ miles.

Left end of large house near Stump Point... 6 11 7¾ miles.

End of roof of house on bluff..... 31 36 6¼ miles.

End of Deal Island Wharf..... 53 03 3¾ miles.

Large house..... 72 35 4¼ miles.

Aspen tree near "Joshua"..... 88 06 5½ miles.

Tall pine tree..... 165 00 40 1½ miles.

HEAD.

General locality.—Upper end of Tangier Sound, on eastern side of southern part of peninsula known as Bishop Head, situated between Hooper Strait and Fishing Bay. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh behind water bushes which skirt shore, about 15 yards southwest of shore, and ½ mile north of extreme south end of Bishop Head. Cement monument marking reference station is 13.41 meters N 20° 37' E of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

"Sharkfin Shoal Light" (S 60° 41' E)..... 0 00 00 2¾ miles.

Crab-house flagstaff..... 50 30 3¼ miles.

Large pine tree..... 97 42 2 miles.

REFERENCE STATION..... 139 55 40 13.41 meters.

Near gable of 2½-story house..... 140 24 ¼ mile.

Chimney of house..... 156 44 ⅙ mile.

Chimney of house..... 208 28 1½ miles.

Chimney of end of house..... 238 53 3 miles.

Right side of Nanticoke Point woods..... 326 56 7½ miles.

CROCH.

General locality.—Western shore of Fishing Bay about 4½ miles northwest of Sharkfin Shoal Light, and ¼ mile north-northeast of entrance to Tedious Creek. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 45 yards southwest of shore, 50 yards west of shore, 60 yards northwest of shore, and 150 yards north of a small marsh island covered with water bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 39° 09' E).....	0	00	00	4½ miles.
Right chimney of house.....	36	59	..	2½ miles.
Right peak of house.....	59	35	..	1½ miles.
Chimney in middle of large building.....	79	02	..	1½ miles.
Chimney in middle of house.....	92	51	..	1½ miles.
Near peak of house.....	120	11	..	¾ mile.
Near peak of house.....	142	41	..	¾ mile.
Chimney outside of right end of house.....	197	39	..	1¾ miles.
Between two chimneys of house nearly in line.	204	40	..	1¼ miles.
Near peak of house.....	219	18	..	1 mile.
Chimney outside of right end of house.....	241	56	..	4 miles.

ROAST.

General locality.—Western shore of Fishing Bay on Roasting Ear Point, about 5¼ miles north-northwest of Sharkfin Shoal Light, 4½ miles north of Bishop Head, and ¾ mile northeast of entrance to Goose Creek. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 40 yards northwest of shore, 40 yards west of shore, and 70 yards south by west of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 21° 41' E).....	0	00	00	5¾ miles.
Left chimney of house on Bishop Head.....	30	05	..	4¾ miles.
Near peak of house.....	45	23	..	3 miles.
Chimney on left end of house.....	69	15	..	2 miles.
Smoke pipe on near house.....	73	36	..	1¾ miles.
Tallest one of five pine trees.....	95	24	..	1 mile.
Stack of canning house on Farm Creek.....	151	29	..	2½ miles.
Stack of canning house on Elliott Island.....	219	33	..	2 miles.
Chimney outside of near end of house.....	229	35	..	1¾ miles.
Chimney in middle of house.....	233	01	..	2 miles.
Between two gables of large house.....	236	00	..	2 miles.
Windmill.....	240	04	..	2 miles.

FARM.

General locality.—Western shore of Fishing Bay on point at south side of entrance to Cedar Creek, about 1½ miles west of Fishing Point, and ¾ mile northeast of entrance to Farm Creek. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 20 yards south of shore, 60 yards northwest of shore, 45 yards west-southwest of extreme end of point, 10 yards east-northeast of a small pond in marsh, and 300 yards south by east of a small oyster watch house on opposite side of Cedar Creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Toddville M. E. Church Spire" (S 45° 58' W).....	0	00	00	1¾ miles.
Chimney in middle of house.....	4	03	..	2 miles.
Stack of canning house on Farm Creek.....	9	31	..	1½ miles.
Near corner of small shanty.....	51	13	..	¾ mile.
Smoke pipe on small shanty.....	84	12	..	¾ mile.
Left chimney of house.....	204	34	..	4¾ miles.
Stack of canning house at Elliott Island.....	239	29	..	1¾ miles.
Near peak of house.....	322	22	..	2¼ miles.

THORO.

General locality.—Western shore of Fishing Bay about $\frac{3}{4}$ mile northeast of entrance to Thoroughfare Creek, and $1\frac{1}{2}$ miles north of Fishing Point on the western end of Elliott Island. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 40 yards northwest of shore, 50 yards north-northeast of shore, 55 yards northeast by north of shore, and 130 yards east-northeast of entrance to a small creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	° ' "			
"Toddville M. E. Church Spire" (S 48°				
30' W).....	0	00	00	 $3\frac{1}{2}$ miles.
Chimney in center of house.....	2	08	..	 3 miles.
Lone poplar tree.....	262	14	..	 2 miles.
Chimney on right end of house.....	271	02	..	 2 miles.
Lightning rod on near peak of large house.....	274	35	..	 $1\frac{3}{4}$ miles.
Spire of church on Elliott Island.....	280	52	50	 $1\frac{3}{4}$ miles.
Center one of three chimneys on house.....	281	54	..	 $1\frac{3}{4}$ miles.
Stack of canning house on Elliott Island.....	306	00	50	 $1\frac{1}{2}$ miles.

HIGH.

General locality.—Southeastern shore of Upper Fishing Bay on Elliott Island, about $\frac{3}{8}$ mile east-northeast of extreme end of Fishing Point. (See Chart No. 41.)

Immediate locality.—Observed station is on high sandy land in a grove of pine trees, about 30 yards east-southeast of edge of bank, and 35 yards west-northwest of near corner of west one of five sheds in a row.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	° ' "			
"Farm" (N 84° 52' W).....	0	00	00	 $1\frac{1}{8}$ miles.
Nail in blaze in pine tree (18 inches diameter).....	174	17	10	 17.83 meters.
Nail in blaze in pine tree (12 inches diameter).....	219	59	10	 5.58 meters.
Near corner of shed with metal roof (west one of five in a row).....	235	38	..	 33 yards.
Left chimney of house.....	257	34	..	 100 yards.
Right chimney of house.....	274	56	..	 $\frac{3}{8}$ mile.
Nail in blaze in pine tree (15 inches diameter).....	312	40	20	 10.28 meters.

ELLIOTT.

General locality.—Eastern shore of Fishing Bay on Fishing Point at the extreme western end of Elliott Island about $5\frac{1}{2}$ miles north-northwest of Clay Island, and opposite entrance to Farm Creek. (See Chart No. 41.)

Immediate locality.—Observed station is on sandy marsh about 1 foot above high water, 16 yards south of shore, 20 yards north of shore, 30 yards east-northeast of extreme end of sandy point, 185 yards west-southwest of a sand ridge near trees and brush, and 290 yards northwest of a canning house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Toddville M. E. Church Spire" (S 73° 11' W)	0	00	00	2 7/8 miles.
Chimney on right end of house	5	55	..	2 miles.
Tangent of high bluff	167	31	..	1/4 mile.
Left edge of old building	250	24	..	..
Stack of canning house at Elliott Island	256	29	42	290 yards.
Small house in trees	326	19	..	2 5/8 miles.

EAR.

General locality.—Eastern shore of Fishing Bay, about 6 1/8 miles north of Sharkfin Shoal Light, 1 3/4 miles east-northeast of Roasting Ear Point, and 1 3/4 miles southeast of Fishing Point, on Elliott Island. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 20 yards northeast of shore, 30 yards north by west of shore, and 40 yards east by south of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 5° 49' E)	0	00	00	6 1/4 miles.
Chimney on left end of house	31	23	..	5 1/2 miles.
Chimney in middle of large building	46	21	..	5 miles.
Near peak of barn	70	22	..	2 1/2 miles.
"Toddville M. E. Church Spire"	102	12	30	3 3/4 miles.
Stack of canning house at Elliott Island	145	59	..	1 1/2 miles.
Chimney on right end of house	151	22	..	1 1/4 miles.
Near peak of house	164	03	..	1 1/4 miles.
Left peak of barn	197	45	..	1 1/4 miles.
"Nanticoke Church"	291	53	50	5 1/2 miles.

FISH.

General locality.—Eastern shore of Fishing Bay, about 4 3/8 miles north of Sharkfin Shoal Light, 3 1/4 miles south-southeast of Elliott Island, and 2 1/4 miles north-northeast of point of Clay Island. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 50 yards northeast of shore, 60 yards east of shore, and 85 yards north-northeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 1° 56' W)	0	00	00	4 3/8 miles.
Center gable of house at Bishop Head	41	59	..	4 1/4 miles.
Near peak of house	63	18	..	4 1/4 miles.
Chimney in middle of house	65	24	..	3 3/8 miles.
Left chimney of house	90	01	..	3 miles.
Near peak of house	99	21	..	3 miles.
Stack of canning house on Farm Creek	120	05	..	5 miles.
Stack of canning house on Elliott Island	146	17	..	3 1/2 miles.
"Nanticoke Church"	263	46	40	4 1/4 miles.

FROG.

General locality.—Western side of entrance to Nanticoke River, on Frog Point, at southeastern end of Clay Island. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh point about 20 yards west of shore, 25 yards east of shore, 25 yards from extreme end of point, and in front of water bushes. Cement monument marking reference station is 13.10 meters N 3° 11' E of observed station.

Marks.—Observed station is nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 41° 25' W).....	0	00	00	3½ miles.
Left tangent of Clay Island.....	35	17	..	1¼ miles.
REFERENCE STATION.....	141	45	50	13.10 meters.
Right tangent of Sandy Point.....	177	41	..	¾ mile.
Chimney of house.....	179	12	..	2¼ miles.
Chimney near end of large house.....	183	02	..	2½ miles.
Stack of canning house.....	184	36	..	2½ miles.
Land end of Nanticoke Wharf.....	184	36	..	2½ miles.
End of Nanticoke Wharf house.....	186	00	..	2¼ miles.
Chimney on ell end of main part of large house.....	211	27	..	2¼ miles.
Right tangent of Nanticoke Point woods.....	238	44	..	2¾ miles.
Large square chimney of house (Dames Quarter).....	264	17	..	4 miles.
Rock Creek poplar tree.....	284	17	..	3¼ miles.
Flagstaff on Deal Island Wharf.....	322	09	..	4¾ miles.

COW.

General locality.—Western shore of Nanticoke River, on Mink Point, about ⅔ mile east of entrance to Cow Creek and 1¾ miles west of Roaring Point. (See Chart No. 41.)

Immediate locality.—Observed station is on very soft marsh at edge of water bushes about 5 yards west of shore, 15 yards northeast of shore, and 15 yards northwest of extreme end of point. Cement monument marking reference station is 8.68 meters N 44° 28' W of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Frog" (S 6° 13' W).....	0	00	00	2 miles.
A shanty.....	37	16	..	¾ mile.
REFERENCE STATION.....	129	19	20	8.68 meters.
A shanty.....	189	53	..	1 mile.
A shanty.....	209	52	..	½ mile.
Tangent of land.....	217	43	..	½ mile.
Large house.....	236	48	..	2½ miles.
Windmill.....	243	52	..	2¾ miles.
Chimney of large house.....	254	24	..	2¼ miles.
Canning house stack.....	257	28	..	1¾ miles.
Canning house stack.....	275	26	..	1½ miles.
Near corner of Nanticoke Wharf.....	284	49	..	1½ miles.
Large house.....	297	32	..	2¼ miles.
Large house.....	299	24	..	2½ miles.
Right tangent of Nanticoke woods.....	310	15	..	3 miles.
Left tangent of Sandy Point.....	341	48	..	1½ miles.

OKAY.

General locality.—Western shore of Nanticoke River, on Marsh Point, about ⅓ mile south of Swan Creek Cove and 2 miles west of Bivalve Wharf. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh about 2 feet above high water, 10 yards back from shore, and 35 yards south of shanty known as Insley's watch house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

Survey of Oyster Bars, Dorchester County, Md.

References.—	°	'	"	
Bivalve Church (N 84° 32' E).....	0	00	00	 2½ miles.
Chimney of house.....	20	38	..	 2½ miles.
Windmill tower.....	46	41	..	 2½ miles.
Tangent of land.....	92	23	..	 1¼ miles.
Tangent of land.....	105	45	..	 150 yards.
Left side of watch house.....	249	17	..	 35 yards.
Right side of watch house.....	258	17	..	 35 yards.
Space between chimneys of large house.....	340	43	..	 3¼ miles.
Tangent of Bivalve Wharf.....	355	31	..	 2¼ miles.
Stack of canning house.....	359	12	..	 2¼ miles.

AR.

General locality.—Western shore of Nanticoke River about 1½ miles northwest of Bivalve Wharf, and ¾ mile north-northeast of entrance to Longrell Creek. (See Chart No. 41.)

Immediate locality.—Observed station is on marsh between two small creeks about 40 yards back from shore, 35 yards west-southwest of mouth of one creek, and 45 yards northwest of the mouth of the other creek.

Marks.—Observed station is center point of triangle on standard cement monument, projecting 4 inches above surface of ground.

References.—	°	'	"	
"Nanticoke Church" (S 13° 34' E).....	0	00	00	 3¾ miles.
Right edge Sandy Point woods.....	23	58	..	 4 miles.
Smoke pipe of cabin.....	42	57	..	 1½ miles.
Chimney of house.....	46	26	..	 ½ mile.
Left tangent of first woods.....	81	20	..	 2¾ miles.
Left tangent of long thick woods.....	98	53	..	 1 mile.
Left edge short thick woods.....	134	11	..	 1 mile.
Chimney of cabin.....	247	47	..	 ½ mile.
Houses with several gables.....	262	18	..	 3 miles.
Right edge Wetipquin woods.....	274	37	..	 2¼ miles.
Chimney of house behind trees.....	302	43	..	 2 miles.
Windmill.....	319	03	..	 2 miles.
Stack of canning house.....	320	15	..	 2 miles.
Chimney of house on Ragged Point.....	350	33	..	 2½ miles.
Windmill.....	352	57	..	 3¼ miles.

GOVER.

General locality.—Northwestern shore of Nanticoke River about 1¾ miles west-northwest of entrance to Wetipquin Creek and ½ mile north of a cove named Perch Haul. (See Progress map.)

Immediate locality.—Observed station is on a point of marsh covered with grass and water bushes, about 15 yards northwest of extreme end of point, 200 yards east-northeast of a shanty among bushes and small trees, ¼ mile east of a clump of about 50 pine trees, and ¼ mile southeast of another clump of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—	°	'	"	
Bivalve Church (S 21° 30' E).....	0	00	00	 2¾ miles.
Tangent of land.....	35	24	..	 1 mile.
Left side of opening in woods.....	72	06	..	 2 miles.
Two pine trees together.....	83	07	..	 ¾ mile.
Center of shanty.....	98	26	..	 200 yards.
Clump of pine trees.....	123	56	..	 ¼ mile.
Clump of pine trees.....	176	20	..	 ¼ mile.

References—Continued.

	°	'	"	
Inside edge of cove.....	201	45	..	100 yards.
Clump of small pine trees.....	255	31	..	¼ mile.
Tangent to point of land.....	269	35	..	1½ miles.
Left tangent of Sandy Hill Wharf.....	276	02	..	3 miles.
Large house.....	286	27	..	3¾ miles.
Left edge of pine woods near Wetipquin Creek.....	328	13	..	2 miles.

STREETT.

General locality.—Northwestern shore of Nanticoke River on point on southwest side of entrance to Jacks Creek. (See Progress map.)

Immediate locality.—Observed station is on a marsh and grass point about 7 yards west from its extreme end and 4 yards from each side of point to north and south. Cement monument marking reference station is 11.89 meters N 60° 22' W of observed station.

Marks.—Observed station is nail in pine stub flush with ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Earle" (S 45° 01' E).....	0	00	00	1 mile.
A shanty.....	0	41	..	1 mile.
Large house.....	27	08	..	2½ miles.
Canning-house stack at Tyaskin.....	33	42	..	1¾ miles..
Large building.....	36	42	..	1¾ miles.
Point of marsh.....	47	33	..	100 yards.
First of four trees.....	135	01	..	½ mile.
REFERENCE STATION.....	164	39	00	11.89 meters.
Point of marsh.....	255	02	..	30 yards.
House on the other side of Jacks Creek.....	258	13	..	½ mile.
Left tangent of Sandy Hill Wharf.....	309	38	..	1¼ miles.
A house.....	318	08	..	1½ miles.

EARLE.

General locality.—Southeastern shore of Nanticoke River about 1 mile below Sandy Hill Wharf. (See Progress map.)

Immediate locality.—Observed station is on sandy and grass land between the river and a pine grove about 5 feet above high water, 80 yards back from shore, 15 yards southeast of a white oak tree, about 2½ feet in diameter, 15 yards southwest of another and larger white oak tree, and 20 yards east of a shanty.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Juliet" (S 41° 05' W).....	0	00	00	1¼ miles..
Nail in blaze in white oak tree (2½ feet diameter).....	88	44	30	13.98 meters.
Nail in blaze in pine tree.....	160	39	00	19.05 meters.
Nail in blaze in oak tree (2½ feet diameter).....	196	35	40	13.95 meters.
Nail in blaze in pine tree.....	326	01	00	15.76 meters.
Right tangent of woods on other side of Wetipquin Creek.....	358	52	..	1½ miles.

JULIET.

General locality.—Eastern shore of Nanticoke River on point on southwest side of entrance to Wetipquin Creek. (See Progress map.)

Immediate locality.—Observed station is on sand and marsh point about 100 yards southwest of entrance to Wetipquin Creek, 10 yards back from high water, 5 yards outside of several small pine trees, and 100 yards north of dense pine woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Earle" (N 41° 04' E).....	0	00	00	1¼ miles.
Nail in blaze in pine tree.....	29	41	30	4.92 meters.
Near point of roof of oyster house.....	40	05	..	300 yards.
Left edge of woods.....	64	21	..	200 yards.
Nail in blaze in pine tree.....	71	17	00	6.31 meters.
Nail in blaze in pine tree.....	98	20	00	6.88 meters.
Right edge of woods.....	163	52	..	200 yards.
Right tangent of Bivalve Wharf.....	170	02	..	1½ miles.
Two-story house.....	210	06	..	2½ miles.
Two-story house.....	228	37	..	¾ mile.
Opening in woods.....	230	16	..	3 miles.
House at Jacks Creek.....	324	00	..	1¾ miles.
Tangent of land.....	345	58	..	150 yards.
Tangent of land.....	354	49	..	150 yards.

POLE.

General locality.—Eastern shore of Nanticoke River on wharf off town of Bivalve, located about 1¼ miles northeast of Ragged Point. (See Chart No. 41.)

Immediate locality.—Observed station is on western peak of a house on wharf at Bivalve about 300 yards from shore.

Marks.—Observed station is flagpole on peak of house.

References.—None necessary.

BIVALVE CHURCH.

General locality.—Eastern shore of Nanticoke River about ¾ mile back from shore in town of Bivalve on main road leading to the steamer landing. (See Chart No. 41.)

Immediate locality.—Observed station is on Bivalve Methodist Church.

Marks.—Observed station is center of steeple on Bivalve Methodist Church.

References.—None necessary.

RAG.

General locality.—Eastern shore of Nanticoke River on northern side of Ragged Point, about 2 miles north-northeast of Roaring Point. (See Chart No. 41.)

Immediate locality.—Observed station is on a sandy point about 25 yards back from shore, 100 yards northeast of extreme end of point, 50 yards west of a grove of pine trees, 20 yards southwest of a group of pine trees, 75 yards southwest of another group of pine trees, and 20 yards west of two 15-inch pine trees 2½ feet apart.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Nanticoke Church" (S 1° 46' E).....	0	00	00	1½ miles.
Left end of Sandy Point.....	29	17	..	3½ miles.
Chimney of house.....	51	48	..	2½ miles.
Large tree at left end of woods.....	130	20	..	3¼ miles.
Left one of two trees (opposite shore).....	169	56	..	3¼ miles.
Flagpole on Bivalve Wharf.....	201	11	..	1¾ miles.
Smoke pipe on Bivalve wharf house.....	207	14	..	1¼ miles.
Nail in stump of limb on pine tree.....	218	35	..	32.78 meters.
Nail in baze in double pine tree.....	258	01	..	19.66 meters.
Nail in blaze in large pine tree.....	293	26	..	43.19 meters.
Chimney of house.....	303	29	..	135 yards.
Windmill near large house.....	344	13	..	¾ mile.
Steeple on barn.....	356	40	..	1 mile.
Large chimney of large flat-roof house.....	357	10	..	1 mile.

NANTICOKE CHURCH.

General locality.—Eastern shore of Nanticoke River in town of Nanticoke, about $\frac{1}{8}$ mile back from river and $\frac{3}{4}$ mile northeast of Roaring Point. (See Chart No. 41.)

Immediate locality.—Observed station is on church known as "Nanticoke Methodist Episcopal Church."

Marks.—Observed station is center of spire on Nanticoke Methodist Episcopal Church.

References.—None necessary.

ROAR.

General locality.—Eastern shore of Nanticoke River on Roaring Point, about $\frac{1}{4}$ mile north from outer end of Roaring Point Wharf. (See Chart No. 41.)

Immediate locality.—Observed station is on a sandy knoll about 5 feet above high water, 20 yards south of shore, 40 yards north of shore, 30 yards east of extreme end of point, and 150 yards from pine woods which stand inshore from station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Frog" (S 39° 02' W).....	0	00	00	2½ miles.
Two shanties.....	19	17	..	2 miles.
One shanty.....	30	20	..	1¾ miles.
A shanty.....	71	32	..	1¾ miles.
A shanty.....	98	53	..	1¾ miles.
Barn steeple.....	117	41	..	4½ miles.
A shanty.....	121	25	..	2¾ miles.
A house.....	144	42	..	7½ miles.
Twin trees on Ragged Point.....	159	30	..	2 miles.
Chimney of house.....	175	23	..	1¾ miles.
Windmill.....	184	04	..	1 mile.
Gambrel-roof house.....	184	32	..	1 mile.
Canning-house stack.....	195	11	..	½ mile.
Land end of wharf.....	271	58	..	¼ mile.
Large house.....	293	38	..	1½ miles.
Right tangent of Nanticoke Point woods.....	297	22	..	2½ miles.
Right tangent of Nanticoke Wharf.....	304	52	..	¾ mile.
Left tangent of Sandy Point.....	359	51	..	1¾ miles.

NANTI.

General locality.—Eastern side of Nanticoke River about $\frac{1}{2}$ mile northwest of Nanticoke Point, and 1¾ miles northwest of Great Shoals Light. (See Chart No. 41.)

Immediate locality.—Observed station is on grass land about 2 feet above high water, 20 yards back from shore, and about midway between house near poplar trees about $\frac{1}{4}$ mile north of station and the edge of woods on Nanticoke Point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Sharkfin Shoal Light" (S 65° 14' W).....	0	00	00	5 miles.
Tangent of Sandy Point.....	51	33	..	2¾ miles.
Left end of Nanticoke Wharf.....	89	45	..	2 miles.
Near chimney of house.....	96	51	..	¾ mile.
Chimney of house.....	101	08	..	¼ mile.
Near chimney of house nearest woods.....	116	56	..	¼ mile.
Tree high above woods.....	119	53	..	2½ miles.
Right end of heavy woods.....	134	03	..	1¾ miles.
Right end of scant woods.....	147	11	..	¾ mile.
Wild cherry tree.....	178	24	..	50 yards.
Left end of woods.....	227	46	..	¼ mile.
Right end of woods.....	269	45	..	¼ mile.
Poplar tree Dames Quarter.....	307	28	..	2¾ miles.
Tangent of Haines Point.....	330	55	..	4½ miles.

WHITE.

General locality.—Eastern side of entrance to Nanticoke River on Stump Point, about $2\frac{3}{4}$ miles southeast of Roaring Point and $1\frac{3}{8}$ miles northwest of Great Shoal Light. (See Chart No. 41.)

Immediate locality.—Observed station is on sand and grass point about 2 feet above high water, 3 yards east of shore, 20 yards northwest of shore, 15 yards north of extreme end of point, 40 yards west of a cove, 100 yards northwest of a point of land, and 100 yards southwest of a dense pine woods. Cement monument marking reference station is 16.63 meters $N\ 3^{\circ}\ 13'$ E of observed station.

Marks.—Observed station is a nail in a pine stub about 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Great Shoals Light" (S $44^{\circ}\ 16'$ E).....	0	00	00	$1\frac{1}{4}$ miles.
Poplar tree at Dames Quarter.....	65	08	..	$2\frac{1}{2}$ miles.
Tangent of Hall Point.....	86	06	..	$3\frac{3}{4}$ miles.
Tangent of Sandy Point.....	164	17	..	3 miles.
Left end of pine woods.....	172	27	..	100 yards.
Right end of pine woods.....	213	21	..	150 yards.
REFERENCE STATION.....	227	29	00	16.63 meters.
Largest one in clump of about 12 pine trees..	247	23	..	$\frac{3}{8}$ mile.
Chimney of cabin on Ellis Point.....	279	05	..	2 miles.
A house.....	311	54	..	$\frac{1}{2}$ mile.
Point of land.....	335	02	..	100 yards.

GREAT SHOALS LIGHT.

General locality.—Entrance to Monie Bay and Wicomico River about halfway between Long Point and Mollies Point. (See Progress map.)

Marks.—Observed station is center of black lantern on square screw pile structure known as "Great Shoals Light."

Reference.—

	°	'	"	
"Sharkfin Shoal Light" (S $81^{\circ}\ 50'$ W).....	0	00	00	$5\frac{3}{8}$ miles.

ROOM.

General locality.—Eastern shore of upper Tangier Sound on Halls Point about $1\frac{1}{8}$ miles northeast of Haines Point, and $2\frac{5}{8}$ miles east-southeast of Sharkfin Shoal Light. (See Chart No. 41.)

Immediate locality.—Observed station is on a locust and mulberry fringed bluff about 15 feet high, 5 yards back from edge of bluff, 15 yards west-northwest of a barn, 15 yards from a wagon road parallel with shore, and 25 yards east of clump of mulberry trees. Cement monument marking reference station is 21.45 meters S $18^{\circ}\ 30'$ W of observed station and almost in line with large mulberry tree.

Marks.—Observed station is nail in center of stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (N $70^{\circ}\ 00'$ W).....	0	00	00	$2\frac{1}{2}$ miles.
Gable on near side of house on Bishop Head..	3	01	..	$5\frac{1}{2}$ miles.
Near end of roof of large $2\frac{1}{2}$ -story house....	12	53	..	$7\frac{1}{4}$ miles.
Left tangent of Clay Island.....	39	18	..	$3\frac{1}{2}$ miles.
Left side of Sandy Point woods.....	70	08	..	4 miles.
Roaring Point Wharf.....	85	22	..	5 miles.
Near chimney on end of large house.....	94	36	..	$4\frac{1}{4}$ miles.
Right side of Nanticoke woods.....	110	28	..	$3\frac{3}{4}$ miles.
"Mount Vernon Church".....	127	18	..	7 miles.
Near corner of barn.....	137	06	..	15.96 meters.
Right-hand corner of barn.....	152	08	..	18.11 meters.
REFERENCE STATION.....	268	30	00	21.45 meters.
Large cedar tree.....	276	30	..	100 yards.
Two-inch iron pipe.....	279	38	30	9.21 meters.

SHARKFIN SHOAL LIGHT.

General locality.—Northern end of Tangier Sound about equally distant from entrances of Hooper Strait, Fishing Bay, and Nanticoke River. (See Chart No. 41.)

Immediate locality.—Observed station is on hexagonal, screw-pile structure known as Sharkfin Shoal Lighthouse.

Marks.—Observed station is center point of lantern on Sharkfin Shoal Light.

Reference.—

"Great Shoals Light" (N 81° 45' E) 0 00 00 5½ miles.

HAINES.

General locality.—Eastern shore of upper Tangier Sound on Haines Point about ⅝ mile north of Deal Island Wharf, and 2½ miles southeast of Sharkfin Shoal Light. (See Chart No. 41.)

Immediate locality.—Observed station is on sand and grass point about 5 feet above high water, 20 yards back from shore, 3 yards west of a barb-wire fence, 20 yards south of a clump of locust and water bushes, and about on range with left edge of clump of trees and bushes and Sharkfin Shoal Light. Cement monument marking reference station is 9.64 meters N 77° 43' E of observed station.

Marks.—Observed station is nail in pine stub in center of a drain tile with top broken off below surface. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"
"Sharkfin Shoal Light" (N 45° 58' W)	0	00	00 2½ miles.
Left of bushes	39	57	00 20 yards.
Left of Sandy Point woods	53	38	00 4¾ miles.
Chimney of 2½-story house	75	04	00 ½ mile.
Chimney of house	85	49	00 350 yards.
Chimney on end of cottage	99	00	00 ¾ mile.
REFERENCE STATION	123	40	40 9.64 meters.
Pine tree	148	37	30 2.14 meters.
Large square chimney of house	152	49	00 400 yards.
Right one of five large pine trees	184	40	00 300 yards.
Halfway between chimneys of store on Deal Island	213	08	00 ¾ mile.
"Deal Island Church"	217	00	00 1½ miles.
Black gum tree	223	49	00 6.70 meters.
Right end of Deal Island wharf	234	10	00 ½ mile.
"Hooper Strait Light"	343	34	00 7½ miles.

DEAL ISLAND CHURCH.

General locality.—Western side of upper Tangier Sound on Deal Island on main road about ¼ mile inshore, and ¾ mile south of bridge across Laws Thoroughfare. (See Chart No. 41.)

Immediate locality.—Observed station is on Deal Island Methodist Church.

Marks.—Observed station is center of steeple on Deal Island Methodist Church.

References.—None necessary.

SOLOMONS LUMP LIGHT.

General locality.—Kedge Straits about ½ mile north of Smith Island and about 1½ miles south of South Marsh. (See Progress map.)

Immediate locality.—Observed station is on square tower on northerly side of a caisson and octagonal structure known as "Solomons Lump Light."

Marks.—Observed station is center of black lantern on square tower.

References.—

"James Island Light" (S 42° 12' E) 0 00 00 7¾ miles.

HOLLAND ISLAND BAR LIGHT.

General locality.—Easterly side of Chesapeake Bay off entrance to Kedge Straits, about $2\frac{3}{4}$ miles south of Holland Island, and $3\frac{3}{4}$ miles northwest of Smith Island. (See Chart No. 42.)

Immediate locality.—Observed station is on hexagonal, screw-pile structure known as Holland Island Bar Light.

Marks.—Observed station is center point of lantern on Holland Island Bar Light.

References.—

"Solomons Lump Light" (S $72^{\circ} 06'$ E)..... 0 00 00 $4\frac{3}{4}$ miles.

HOLLAND ISLAND CHURCH SPIRE.

General locality.—Eastern side of Chesapeake Bay on Holland Island about $3\frac{1}{2}$ miles north of Holland Island Bar Light. (See Chart No. 42.)

Immediate locality.—Observed station is on church known as Holland Island Church.

Marks.—Observed station is center of spire on Holland Island Church.

References.—None necessary.

OKAHANIKAN.

General locality.—Eastern shore of Chesapeake Bay on western side of Bloodworth Island about $\frac{3}{8}$ mile south of point at south side of entrance to Okahanikan Cove, and $2\frac{3}{4}$ miles south-southeast of Hooper Strait Light. (See Chart No. 42.)

Immediate locality.—Observed station is on sandy marsh about 2 feet above high water, 40 yards southeast of shore, 40 yards east of shore, and 35 yards west of water bushes between sand and soft marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

"Hooper Strait Light" (N $17^{\circ} 15'$ E).....	0	00	00	.....	$2\frac{3}{4}$ miles.
Peak of barn.....	4	50	..	.....	4 miles.
Left chimney of large house.....	34	48	..	.....	$3\frac{3}{4}$ miles.
Deal Island church spire.....	89	30	40	.....	8 miles.
Chimney on small house.....	160	00	..	.....	.....
Chimney of house on Billys Island.....	166	50	..	.....	$1\frac{1}{4}$ miles.
Tangent to north end of Billys Island.....	173	03	..	.....	1 mile.
"Hooper Island Light".....	280	55	40	.....	10 miles.
"Hopkins Memorial Church Cupola".....	306	24	20	.....	$4\frac{1}{2}$ miles.
Chimney in center of house.....	308	48	..	.....	$4\frac{1}{2}$ miles.
Chimney on right end of house.....	351	16	..	.....	5 miles.

SENATOR.

General locality.—Western shore of Tangier Sound on southern side of Holland Straits and on extreme northeastern point of South Marsh. (See Progress map.)

Immediate locality.—Observed station is on marshland about 35 yards from north side of point, 30 yards from east side of point, 10 yards north of a small pool of water, and 5 yards northeast of another small pool of water. No permanent reference points near station.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

"Sharkfin Shoal Light" (N $16^{\circ} 21'$ E).....	0	00	00	.....	$4\frac{3}{4}$ miles.
Chimney on house.....	31	30	..	.....	$4\frac{3}{4}$ miles.
Left-hand chimney of crab house on Deal Island.....	50	19	..	.....	$3\frac{1}{2}$ miles.
Right end of large oyster house on Deal Island.....	81	59	..	.....	$3\frac{1}{2}$ miles.
Lone pine tree.....	201	35	..	.....	$1\frac{7}{8}$ miles.

MILES.

General locality.—Western shore of Tangier Sound on eastern side of the lower half of South Marsh just south of the middle one of three creeks on this shore of the island. (See Progress map.)

Immediate locality.—Observed station is on a marsh point about 75 yards south of entrance to a small creek, 50 yards south of the north side of the point, and 60 yards west of its extreme end.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Sharkfin Shoal Light" (N 8° 33' E).....	0	00	00	7¾ miles.
"Deal Island Church".....	29	26	..	5¼ miles.
End of roof of house among trees, Deal Island.	33	48	..	4¼ miles.
Tangent of near point of land.....	155	35	..	¼ mile.
"Solomons Lump Light".....	178	56	55	3¼ miles.
First large tree (third from left).....	231	57	..	⅞ mile.
Lone pine tree.....	330	27	..	4¼ miles.

FOG 2.

General locality.—Eastern shore of Chesapeake Bay and southern shore of Kedge Straits on northwest point of Smith Island known as Fog Point. (See Progress map.)

Immediate locality.—Observed station is among myrtle bushes on the north side of a sand and grass point about 1 foot above high water. 65 yards southwest from extreme end of point, 6 yards south-south-east from shore, and 50 yards east-northeast from the remains of old "Fog Point Lighthouse." Cement monument marking reference station is 15.26 meters S 0° 40' W from observed station and about in line with a lone cherry tree one-fourth mile distant.

Marks.—Observed station is nail in center of tile pipe with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Solomons Lump Light" (N 59° 22' E).....	0	00	00	1¾ miles.
Tangent of point of land.....	13	08	..	¾ mile.
Large tree near two smaller ones.....	22	41	..	1½ miles.
Lone pine tree.....	89	28	..	1 mile.
REFERENCE STATION.....	121	18	30	15.26 meters.
Large lone cherry tree.....	121	26	..	¼ mile.
First one of two trees.....	133	43	..	½ mile.
Old lighthouse foundation.....	193	47	..	50 yards.
First tree on Holland Island.....	272	37	..	5¾ miles.

POINT NO POINT LIGHT.

General locality.—Western side of Chesapeake Bay offshore about 1¼ miles southeast of Point No Point and 6¾ miles north-northeast of Point Lookout. (See Progress map.)

Immediate locality.—Observed station is on brick dwelling on a cylindrical foundation known as Point No Point Lighthouse.

Marks.—Observed station is center point of lantern on Point No Point Lighthouse.

References.—

	°	'	"	
"Cedar Point Light" (N 19° 35' W).....	0	00	00	12 miles.

POINT LOOKOUT LIGHT.

General locality.—Western side of Chesapeake Bay on Point Lookout at northern side of entrance to Potomac River. (See Progress map.)

Immediate locality.—Observed station is on Point Lookout Lighthouse, which is a dwelling on shore near a fog-bell tower.

Marks.—Observed station is center point of a lantern on a dwelling known as Point Lookout Lighthouse.

References.—

	°	'	"	
"Smith Point Light" (S 34° 37' E).....	0	00	00	13 miles.

BOUNDARIES OF OYSTER BARS.

EXPLANATION.

The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the designation and employment by the Department of Commerce and Labor of such officers, experts, and other technically qualified persons "as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland." The oyster laws of Maryland provide that the Maryland Shell Fish Commissioners, with the aid of such persons as may be designated by the Government, shall proceed "to have laid out, surveyed, and designated on the said charts the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts." The oyster laws of Maryland also provide in another section that there shall "be made a true and accurate survey of the natural oyster beds, bars, and rocks * * * with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey."

Under the provisions of the laws quoted above the State of Maryland, in cooperation with the Department of Commerce and Labor, must define the boundaries of the natural oyster bars "as accurately as practicable" and also "with reference to fixed and permanent objects on the shore, giving courses and distances." The requirement of "as accurately as practicable" is easily fulfilled by definition of the location of the corners of the oyster bars by latitude and longitude. In fact, this method is probably the most satisfactory and accurate one that could be used for all purposes of legal definition or for relocation of the oyster-bar boundaries by competent engineers. Therefore the additional requirement of "giving courses and distances" is superfluous and is only fulfilled in the published definitions on account of the specific provisions of the law making it compulsory. This part of the description of boundaries has involved an immense amount of extra computations in order to prevent technical discrepancies between the latitude and longitude of a corner of an oyster bar and its distance and bearing from objects on shore of known latitude and longitude without adding anything to the accuracy and very little to the convenience of practical use of the descriptions of the oyster-bar boundaries.

As provided by law the boundaries of the oyster bars are all straight lines, but in the work already completed they have inclosed areas of all shapes from triangles to

complicated 14-sided figures, and of all sizes from 4 acres to 7,548 acres. The sides have varied in length from 93 to 7,529 yards, and in some cases the corners of the boundaries have been practically at the triangulation stations from which they are located, while in other instances they were over 13,600 yards from the landmarks most available for the purpose of fixing their position.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made and the magnitude of the work with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and great importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and the future.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in each county.

Title.—At the top of each tabular form is given the legal name of the oyster bar to be described, and the one by which it is known and designated in the published oyster records and on the oyster charts. The adopted name of the oyster bar is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the commission; and when there was no local name in common use a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the oyster bar was located.

Underneath the name, in parentheses, is given the general locality of the oyster bar and the serial number of the "Maryland Oyster Chart" on which its legal boundaries are shown.¹

First column.—This column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar. Where a corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars, only the number of the corner of the oyster bar being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the commission as the primary technical definition of the location of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

of the survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"¹ and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"² gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars: One, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

(1) *Triangulation.*—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those

¹ The mean magnetic variation for Dorchester County was 6° 00' west of north in 1911 and increasing at the rate of 5' yearly.

² Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D.-C.

not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant, the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "Drum Point" oyster bar, which is the first one described in this publication, and assume that "Corner No. 3" is to be examined as to its position. The angle between the two landmarks "Up" and "Blind" as determined from right to left from the forward bearings from this corner is $26^{\circ} 36'$ and the angle between "Blind" and "Myrtle" is $60^{\circ} 12'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor (position finder), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The

second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant, then the other, until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic location of a point is attained. In fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State Fishery Force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer can take compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,¹ and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks, for which the bearings are published, have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used. This can be done by getting their bearings directly from the chart by parallel rulers or a protractor and then applying these new bearings in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fifth column of the tables opposite the "corner" in question. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

¹The mean magnetic variation for Dorchester County was $6^{\circ} 00'$ west of north in 1911 and increasing at the rate of $5'$ yearly.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

DRUM POINT.

(Upper Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 38 35.96	75 57 34.20	N 77 36 W	S 77 36 E	663	Up.
			S 75 48 W	N 75 47 E	1,776	Blind.
			S 15 36 W	N 15 36 E	201	Myrtle.
2	38 38 37.27	75 57 37.42	N 80 05 W	S 80 06 E	571	Up.
			S 73 40 W	N 73 39 E	1,706	Blind.
			S 7 24 E	N 7 24 W	241	Myrtle.
3	38 38 52.76	75 57 27.92	S 62 27 W	N 62 26 E	918	Up.
			S 16 09 W	N 16 09 E	792	Myrtle.
			S 11 58 W	N 11 58 E	1,576	Hut.
4	38 38 50.12	75 57 22.04	S 70 55 W	N 70 54 E	1,025	Up.
			S 29 14 W	N 29 14 E	770	Myrtle.
			S 18 22 W	N 18 22 E	1,531	Hut.

CABIN CREEK ENTRANCE.

(Upper Choptank River—Chart No. 35.)

1	38 38 02.66	75 58 13.40	N 17.08 E	S 17 08 W	1,323	Up.
			N 44 54 W	S 44 55 E	970	Blind.
			S 84 07 W	N 84 07 E	1,824	Raccoon.
2	38 38 07.42	75 58 17.50	N 24 17 E	S 24 17 W	1,215	Up.
			N 47 35 W	S 47 36 E	781	Blind.
			S 78 30 W	N 78 29 E	1,741	Raccoon.
3	38 38 14.37	75 58 05.06	N 11 00 E	S 11 00 W	886	Up.
			N 72 06 W	S 72 07 E	951	Blind.
			S 74 03 W	N 74 02 E	2,116	Raccoon.
4	38 38 10.08	75 58 01.20	N 3 47 E	S 3 47 W	1,017	Up.
			N 66 33 W	S 66 34 E	1,098	Blind.
			S 78 27 W	N 78 26 E	2,181	Raccoon.

Survey of Oyster Bars, Dorchester County, Md.

CABIN CREEK.

(Upper Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 37 33.23	75 58 28.98	N 9 14 W N 60 07 W S 84 56 W	S 9 14 E S 60 07 E N 84 56 E	1,702 1,617 1,748	Blind. Raccoon. Bank.
2	38 37 46.60	75 58 57.78	N 21 41 E N 61 00 W S 58 18 W	S 21 42 W S 61 00 E N 58 18 E	1,322 732 1,150	Blind. Raccoon. Bank.
3	38 38 07.18	75 58 37.02	Thence along county boundary as delineated on chart No. 35 to corner No. 3.			
			N 42 21 E N 6 26 W S 74 06 W	S 42 22 W S 6 26 E N 74 05 E	1,506 538 1,237	Up. Blind. Raccoon.
4	38 37 55.62	75 58 17.54	N 18 23 E N 31 54 W N 88 17 W	S 18 23 W S 31 54 E S 88 18 E	1,584 1,089 1,706	Up. Blind. Raccoon.

TANNERS PATCH.

(Upper Choptank River—Chart No. 35.)

1	38 36 52.72	75 58 44.82	S 24 01 E N 65 28 E N 24 21 W	N 24 01 W S 65 28 W S 24 22 E	1,070 431 2,384	War. Wick. Raccoon.
2	38 37 01.20	75 58 57.24	S 31 11 E S 81 34 E N 19 09 W	N 31 11 W N 81 34 W S 19 09 E	1,475 728 1,997	War. Wick. Raccoon.
3	38 37 08.12	75 58 50.58	N 59 21 W S 71 19 W S 30 37 W	S 59 22 E N 71 18 E N 30 37 E	1,356 788 1,102	Bank. Spindle. Jam.
4	38 36 59.38	75 58 38.21	S 53 39 W N 87 45 W N 56 35 W	N 53 38 E S 87 46 E S 56 35 E	1,103 1,075 1,793	Jam. Spindle. Bank.

DIXON.

(Upper Choptank River—Chart No. 35.)

1	38 35 46.40	75 59 12.80	S 27 19 E S 82 40 E N 43 01 E	N 27 19 W N 82 39 W S 43 02 W	1,502 906 1,724	Chief. Gander. War.
2	38 36 26.90	75 58 57.27	Thence along county boundary as delineated on chart No. 35 to corner No. 2.			
			S 18 11 E S 82 07 E N 34 31 E	N 18 11 W N 82 07 W S 34 31 W	1,559 772 1,274	Gander. War. Wick.
3	38 36 21.78	75 58 45.54	S 7 40 E N 81 38 E N 18 36 E	N 7 40 W S 81 38 W S 18 36 W	1,320 459 1,290	Gander. War. Wick.
4	38 35 57.08	75 58 53.42	S 5 56 E S 38 58 E S 36 23 E	N 5 56 W N 38 58 W N 36 23 W	1,703 611 1,118	Chief. Gander. War.

OYSTER SHELL POINT.

(Upper Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 35 05.58	76 00 08.13	N 61 54 E N 4 16 E N 60 16 W	S 61 55 W S 4 17 W S 60 17 E	2,677 1,257 1,720	Gander. Duck. Barber.
2	38 35 14.68	76 00 30.08	N 72 03 E N 35 29 E N 59 07 W	S 72 04 W S 35 29 W S 59 07 E	3,094 1,162 1,063	Gander. Duck. Barber.
Thence along county boundary as delineated on chart No. 35 to corner No. 3.						
3	38 35 29.35	75 59 58.01	N 77 38 E N 21 05 W N 88 21 W	S 77 39 W S 21 05 E S 88 21 E	2,144 484 1,762	Gander. Duck. Barber.
4	38 35 13.00	75 59 45.02	N 60 00 E N 27 18 W N 74 02 W	S 60 01 W S 27 19 E S 74 03 E	2,021 1,129 2,189	Gander. Duck. Barber.

STATES BANK.

(Middle Choptank River—Chart No. 35.)

1	38 34 03.60	76 02 35.51	N 43 03 E N 9 06 E S 89 16 W	S 43 03 W S 9 06 W N 89 15 E	1,947 2,010 1,075	Rear. Boling. Shoal.
2	38 34 11.20	76 02 32.80	N 47 08 E N 8 06 E S 76 45 W	S 47 09 W S 8 07 W N 76 45 E	1,715 1,754 1,179	Rear. Boling. Shoal.
3	38 34 24.13	76 02 28.08	N 57 10 E N 5 22 E S 60 58 W	S 57 10 W S 5 22 W N 60 58 E	1,347 1,298 1,456	Rear. Boling. Shoal.
Thence along county boundary as delineated on Chart No. 35 to corner No. 4.						
4	38 34 18.74	76 01 58.46	S 49 58 E N 20 53 E N 24 13 W	N 49 58 W S 20 53 W S 24 13 E	926 977 1,616	Ferry. Rear. Boling.
5	38 34 10.08	76 02 02.44	S 69 33 E N 20 38 E N 17 31 W	N 69 33 W S 20 38 W S 17 31 E	860 1,287 1,851	Ferry. Rear. Boling.

SHOAL CREEK.

(Middle Choptank River—Chart No. 35.)

1	38 34 03.60	76 02 35.51	N 43 02 E N 9 06 E S 89 16 W	S 43 03 W S 9 06 W N 89 15 E	1,947 2,010 1,075	Rear. Boling. Shoal.
2	38 34 26.23	76 03 37.80	S 36 26 E N 16 10 E N 51 04 W	N 36 26 W S 16 11 W S 51 05 E	966 2,543 2,137	Shoal. Double. Cambridge.
3	38 34 38.42	76 03 29.50	N 84 51 E N 13 31 E N 63 40 W	S 84 52 W S 13 32 W S 63 41 E	2,760 2,090 2,100	Rear. Double. Cambridge.
4	38 34 11.20	76 02 32.80	N 47 08 E N 8 06 E S 76 45 W	S 47 09 W S 8 07 W N 76 45 E	1,715 1,754 1,179	Rear. Boling. Shoal.

Survey of Oyster Bars, Dorchester County, Md.

GREEN MARSH.

(Middle Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 34 36.98	76 04 07.08	N 42 10 W	S 42 10 E	1,322	Cambridge.
			S 19 40 W	N 19 40 E	591	East Cambridge tall stack.
			S 49 48 E	N 49 48 W	1,766	Shoal.
2	38 35 06.05	76 04 40.62	N 65 06 E	S 65 07 W	2,614	Double.
			N 7 12 W	S 7 13 E	3,682	Red.
			N 50 20 W	S 50 21 E	1,479	Command.
3	38 35 27.32	76 04 27.48	N 81 21 W	S 81 22 E	1,503	Command.
			S 25 52 W	N 25 52 E	797	Cambridge.
			S 33 39 E	N 33 38 W	3,409	Shoal.
4	38 34 49.95	76 03 47.52	N 68 53 W	S 68 53 E	1,507	Cambridge.
			S 35 48 W	N 35 48 E	1,225	East Cambridge tall stack.
			S 27 47 E	N 27 47 W	1,783	Shoal.

HAMBROOKS.

(Middle Choptank River—Chart No. 35.)

1	38 35 36.96	76 04 11.95	S 87 00 W	N 86 59 E	1,900	Command. Cambridge. Double.
			S 36 03 W	N 36 03 E	1,289	
			N 87 58 E	S 87 58 W	1,613	
2	38 35 51.84	76 05 01.66	S 81 22 E	N 81 21 W	2,961	Double. Red. Howells.
			N 2 34 E	S 2 34 W	2,112	
			N 59 52 W	S 59 53 E	3,077	
3	38 36 10.60	76 05 12.54	N 71 30 E	S 71 31 W	3,391	Double. Red. Howells.
			N 14 32 E	S 14 32 W	1,526	
			N 68 58 W	S 68 59 E	2,544	
Thence along county boundary as delineated on chart No. 35 to corner No. 1.						

TURTLE BACK.

(Middle Choptank River—Chart No. 35.)

1	38 35 43.90	76 05 21.78	N 14 47 E	S 14 47 W	2,457	Red.	
			N 49 35 W	S 49 36 E	2,796	Howells.	
			S 64 58 W	N 64 57 E	3,052	Howard.	
2	38 35 58.78	76 05 55.86	N 39 11 E	S 39 12 W	2,419	Red.	
			N 43 06 W	S 43 06 E	1,797	Howells.	
			S 46 06 W	N 46 05 E	2,586	Howard.	
3	38 36 09.56	76 05 26.90	Thence along county boundary as delineated on Chart No. 35				to corner No. 3.
			N 26 46 E	S 26 46 W	1,693	Red.	
			N 64 34 W	S 64 35 E	2,208	Howells.	
			S 50 39 W	N 50 38 E	3,401	Howard.	

SANDY HILL LUMPS.

(Middle Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 35 30.92	76 06 04.28	N 84 27 E N 24 03 W N 66 29 W	S 84 28 W S 24 04 E S 66 31 E	1,082 2,465 4,143	Command. Howells. Toot.
2	38 35 36.38	76 06 08.12	S 86 08 E N 23 36 W N 68 21 W	N 86 08 W S 23 36 E S 68 22 E	1,181 2,256 3,979	Command. Howells. Toot.
3	38 35 42.82	76 05 56.38	S 71 07 E N 33 16 W N 72 40 W	N 71 06 W S 33 17 E S 72 41 E	916 2,212 4,199	Command. Howells. Toot.
4	38 35 35.45	76 05 51.45	S 86 15 E N 32 38 W N 70 05 W	N 86 15 W S 32 39 E S 70 07 E	738 2,492 4,402	Command. Howells. Toot.

SANDY HILL.

(Middle Choptank River—Chart No. 35.)

1	38 35 18.80	76 06 32.90	N 74 22 E N 5 19 W N 55 53 W	S 74 23 W S 5 19 E S 55 54 E	1,904 2,672 3,674	Command. Howells. Toot.
2	38 35 23.28	76 07 29.58	N 83 49 E N 26 32 E N 21 12 W	S 83 50 W S 26 32 W S 21 13 E	3,353 2,804 6,209	Command. Howells. Chlora.
Thence from corner No. 2 along the mean low water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 35 29.62	76 07 39.76	N 87 39 E N 33 33 E N 19 31 W	S 87 41 W S 33 33 W S 19 32 E	3,607 2,754 5,916	Command. Howells. Chlora.
4	38 36 15.38	76 07 16.76	N 85 21 W S 6 45 E S 65 01 E	S 85 22 E N 6 44 W N 66 00 W	1,888 2,369 3,395	Toot. Howard. Command.
5	38 35 49.78	76 06 23.68	N 72 49 W S 37 06 W S 71 31 E	S 72 50 E N 37 06 E N 71 30 W	3,439 1,868 1,676	Toot. Howard. Command.

Survey of Oyster Bars, Dorchester County, Md.

COMMANDER.

(Middle Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 35 05.62	76 07 06.25	N 11 34 E N 4 25 W N 40 45 W	S 11 34 W S 4 25 E S 40 45 E	3,169 5,262 3,308	Howells. Trappe. Toot.
Thence from corner No. 1 along the mean low water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 35 10.24	76 07 15.66	S 57 55 E N 74 53 E N 1 00 W	N 57 55 W S 74 54 W S 1 00 E	294 3,072 4,607	Howard. Command. Black Beacon.
3	38 35 13.00	76 07 13.01	S 35 41 E N 76 15 E N 1 54 W	N 35 41 W S 76 16 W S 1 54 E	307 2,981 4,514	Howard. Command. Black Beacon.
4	38 35 09.10	76 07 04.21	N 72 29 E N 11 00 E N 42 49 W	S 72 30 W S 11 01 W S 42 50 E	2,792 3,043 3,256	Command. Howells. Toot.

HORN POINT.

(Middle Choptank River—Chart No. 35.)

1	38 36 01.54	76 08 51.30	N 1 04 W N 36 28 W N 89 02 W	S 1 04 E S 36 29 E S 89 03 E	4,501 3,859 1,819	Chlora. Large water tank. Le Compte.
2	38 36 05.80	76 08 59.82	N 1 51 E N 34 57 W S 85 57 W	S 1 51 W S 34 58 E N 85 57 E	4,358 3,611 1,598	Chlora. Large water tank. Le Compte.
3	38 36 31.46	76 08 34.36	S 66 39 W S 23 54 E N 85 58 E	N 66 39 E N 23 54 W S 85 59 W	2,469 425 2,976	Le Compte. Toot. Howells.
4	38 36 46.21	76 08 32.40	S 57 32 W S 7 44 E S 84 21 E	N 57 29 E N 7 44 W N 84 20 W	2,748 895 2,929	Le Compte. Toot. Howells.
5	38 36 22.66	76 08 05.67	S 31 11 E N 77 05 E N 18 50 W	N 31 11 W S 77 06 W S 18 50 E	3,037 2,266 4,001	Howard. Howells. Chlora.
6	38 36 14.90	76 08 21.45	S 40 25 E N 73 42 E N 12 11 W	N 40 25 W S 73 43 W S 12 11 E	3,070 2,735 4,143	Howard. Howells. Chlora.

Thence from corner No. 6 along the mean low water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

LE COMPTE.

(Middle Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 36 31.46	76 08 34.36	S 66 39 W S 23 54 E N 85 58 E	N 66 39 E N 23 54 W S 85 59 W	2,469 425 2,976	Le Compte. Toot. Howells.
2	38 37 03.90	76 09 04.60	S 35 18 W S 33 16 E S 76 47 E	N 35 17 E N 33 15 W N 76 45 W	2,538 1,769 3,869	Le Compte. Toot. Howells.
3	38 37 24.00	76 08 54.36	S 32 17 W S 17 59 E S 65 55 E	N 32 17 E N 17 59 W N 65 52 W	3,252 2,271 3,829	Le Compte. Toot. Howells.
4	38 37 52.86	76 09 25.36	N 47 35 E N 2 15 E S 64 59 W	S 47 36 W S 2 15 W N 64 58 E	1,106 3,304 1,538	Chlora. Landeye. Large Water Tank.
5	38 37 17.02	76 08 23.70	Thence along county boundary as delineated on Chart No. 35 to corner No. 5.			
			S 45 23 W S 3 16 W S 63 42 E	N 45 22 E N 3 16 E N 63 41 W	3,580 1,929 2,994	Le Compte. Toot. Howells.
6	38 36 46.21	76 08 32.40	S 57 32 W S 7 44 E S 84 21 E	N 57 29 E N 7 44 W N 84 20 W	2,748 895 2,929	Le Comte. Toot. Howells.

CASTLE HAVEN CREEK.

(Middle Choptank River—Chart No. 35.)

1	38 36 53.06	76 09 52.72	S 6 28 W S 63 33 E N 26 06 W	N 6 28 E N 63 32 W S 26 05 E	1,717 2,509 1,521	Le Compte. Toot. Large Water Tank.
Thence from corner No. 1 along the mean low water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 37 21.68	76 10 13.20	N 87 52 E N 49 12 E N 17 38 W	S 87 54 W S 49 13 W S 17 38 E	4,619 2,750 4,210	Black Beacon. Chlora. Large Water Tank.
3	38 37 39.00	76 10 00.38	S 68 37 W S 42 33 E S 84 30 E	N 68 37 E N 42 32 W N 84 28 W	502 3,620 4,297	Large Water Tank. Toot. Black Beacon.
4	38 37 17.41	76 09 30.56	N 66 31 W S 17 09 W S 40 34 E	S 66 32 E N 17 08 E N 40 33 W	1,360 2,644 2,551	Large Water Tank. Le Compte. Toot.

Survey of Oyster Bars, Dorchester County, Md.

CASTLE HAVEN.

(Outer Choptank River—Charts Nos. 35 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
	38 36 51.26	76 12 04.64	N 60 26 W S 20 37 W N 63 10 E	S 60 27 E N 20 37 E S 63 11 W	3,767 114 3,161	Dot. Corner. Large Water Tank.
2	38 36 58.50	76 12 39.54	S 68 22 E N 27 15 E N 55 32 W	N 68 22 W S 27 16 W S 55 33 E	950 5,426 2,855	Corner. Choptank River Light. Dot.
3	38 37 32.00	76 12 49.04	S 37 29 E N 36 32 E N 76 59 W	N 37 28 W S 36 33 W S 77 00 E	1,865 4,597 2,158	Corner. Choptank River Light. Dot.
4	38 37 28.60	76 12 09.40	N 79 13 W S 3 36 E N 86 45 E	S 79 14 E N 3 36 W S 86 46 W	3,208 1,368 2,952	Dot. Corner. Large Water Tank.
5	38 38 28.84	76 10 46.48	S 31 49 W S 35 07 E S 81 02 E	N 31 48 E N 35 07 W N 81 00 W	3,998 1,928 2,999	Corner. Castle. Chlora.
6	38 37 38.70	76 09 49.62	N 50 00 E N 30 04 W N 73 59 W	S 50 01 W S 30 05 E S 73 59 E	1,903 4,008 410	Chlora. Choptank River Light. Castle.

Thence from corner No. 6 along the mean low water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

COOK POINT.

(Outer Choptank River—Charts Nos. 36 and 37.)

1	38 38 15.20	76 16 26.68	S 68 09 W S 75 07 E N 31 13 E	N 68 09 E N 75 06 W S 31 15 W	1,768 3,782 7,853	Chef. Dot. Roys.
2	38 38 37.80	76 17 47.96	S 19 43 E S 73 22 E N 23 34 W	N 19 42 W N 73 20 W S 23 35 E	1,508 6,059 6,020	Chef. Dot. Bar.
3	38 38 48.40	76 17 48.16	S 16 08 E S 70 12 E N 24 57 W	N 16 07 W N 70 10 W S 24 58 E	1,850 6,174 5,692	Chef. Dot. Bar.
4	38 38 52.80	76 17 30.32	S 1 15 E S 67 14 E N 16 58 E	N 1 15 W N 67 12 W S 16 59 W	1,926 5,788 6,768	Chef. Dot. Nelson 3.
5	38 39 47.20	76 17 08.36	N 16 44 E N 82 51 W S 8 09 W	S 16 45 W S 82 53 E N 8 09 E	4,845 5,233 3,798	Nelson 3. Black. Chef.
6	38 39 51.12	76 16 42.84	N 9 05 E N 84 56 W S 17 19 W	S 9 05 W S 84 59 E N 17 19 E	4,564 5,890 4,077	Nelson 3. Black. Chef.
7	38 39 29.28	76 16 17.40	S 30 52 W S 44 30 E N 42 12 E	N 30 51 E N 44 29 W S 42 13 W	3,678 4,863 5,694	Chef. Dot. Roys.

RED BUOY.

(Outer Choptank River—Charts Nos. 36 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 38 11.38	76 18 33.10	N 87 13 W S 67 19 W S 72 44 E	S 87 16 E N 67 17 E N 72 44 W	6,366 5,679 1,783	Sharps Island Light. Jere. Chef.
2	38 38 19.61	76 18 47.52	N 89 42 W S 63 05 W S 68 50 E	S 89 44 E N 63 03 E N 68 49 W	5,975 5,449 2,235	Sharps Island Light. Jere. Chef.
3	38 38 49.02	76 18 11.33	S 59 17 W S 20 05 E S 32 04 E	N 59 15 E N 20 03 W N 32 04 W	6,765 8,467 2,123	Jere. Brannock. Chef.
4	38 38 33.14	76 18 06.04	S 63 51 W S 20 27 E S 38 00 E	N 63 50 E N 20 26 W N 38 00 W	6,635 7,916 1,603	Jere. Brannock. Chef.

SPEDDEN.

(Entrance Choptank River—Charts Nos. 36 and 37.)

1	38 37 10.14	76 18 16.06	S 82 55 E N 39 11 E S 88 45 W	N 82 54 W S 39 12 W N 88 43 E	2,363 1,982 5,693	Cook Point Windmill. Chef. Jere.
2	38 37 31.92	76 18 50.81	S 79 48 W S 36 26 E N 69 45 E	N 79 46 E N 36 25 W S 69 46 W	4,848 6,653 2,314	Jere. Brannock. Chef.
3	38 37 45.32	76 19 01.38	S 73 44 W S 36 05 E N 81 53 E	N 73 43 E N 36 04 W S 81 54 W	4,680 7,183 2,476	Jere. Brannock. Chef.
4	38 37 49.56	76 18 55.20	S 72 40 W S 34 22 E N 84 51 E	N 72 38 E N 34 21 W S 84 52 W	4,876 7,207 2,297	Jere. Brannock. Chef.
5	38 37 32.40	76 18 24.66	S 80 54 W S 31 16 E N 62 02 E	N 80 52 E N 31 14 W S 62 03 W	5,533 6,281 1,675	Jere. Brannock. Chef.
6	38 37 13.42	76 18 10.90	S 79 41 E N 38 03 E S 87 41 W	N 79 40 W S 38 03 W N 87 39 E	2,245 1,810 5,832	Cook Point Windmill. Chef. Jere.

Survey of Oyster Bars, Dorchester County, Md.

DUPONT.

(Chesapeake Bay—Off Tripps Bay—Charts Nos. 36 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 36 45.00	76 17 27.32	S 24 48 E N 62 11 E N 0 54 W	N 24 47 W S 62 12 W S 0 54 E	4, 152 1, 193 2, 384	Brannock. Cook Point Windmill. Chef.
2	38 36 54.84	76 17 46.20	S 28 39 E N 81 46 E N 12 42 E	N 28 38 W S 81 47 W S 12 42 W	4, 674 1, 572 2, 103	Brannock. Cook Point Windmill. Chef.
3	38 37 01.20	76 17 40.40	S 25 49 E N 89 34 E N 9 32 E	N 25 48 W S 89 35 W S 9 32 W	4, 794 1, 402 1, 863	Brannock. Cook Point Windmill. Chef.
4	38 36 50.60	76 17 22.10	S 22 03 E N 68 09 E N 4 34 W	N 22 02 W S 68 09 W S 4 34 E	4, 271 989 2, 201	Brannock. Cook Point Windmill. Chef.

DIAMOND.

(Chesapeake Bay—Vicinity Sharps Island—Charts Nos. 36 and 37.)

1	38 36 10.60	76 20 02.68	S 65 58 E N 48 58 E N 56 43 W	N 65 55 W S 49 00 W S 50 44 E	6, 410 5, 398 3, 434	Brannock. Chef. Jere.
2	38 36 39.40	76 20 43.16	S 62 38 E N 63 26 E N 40 31 W	N 62 36 W S 63 28 W S 40 32 E	7, 797 5, 750 4, 489	Brannock. Chef. Sharps Island Light.
Thence along county boundary as delineated on charts Nos. 36 and 37 to corner No. 3.						
3	38 36 58.72	76 20 27.22	S 56 56 E N 67 52 E N 50 24 W	N 56 53 W S 67 54 W S 50 26 E	7, 761 5, 096 4, 332	Brannock. Chef. Sharps Island Light.
4	38 36 58.28	76 18 45.32	N 88 00 E N 46 18 E N 65 19 W	S 88 02 W S 46 19 W S 65 21 E	3, 121 2, 802 6, 641	Cook Point Windmill. Chef. Sharps Island Light.
5	38 36 10.72	76 19 10.96	S 59 45 E N 37 23 E N 66 05 W	N 59 45 W S 37 23 W S 66 06 E	5, 191 4, 454 4, 637	Brannock. Chef. Jere.

BRANNOCK.

(Chesapeake Bay Off Tripps Bay—Charts Nos. 36 and 37.)

1	38 36 09.83	76 17 22.46	S 31 58 E N 28 00 E N 74 58 W	N 31 58 W S 28 01 W S 75 01 E	3, 046 1, 974 7, 361	Brannock. Cook Point Windmill. Jere.
2	38 36 20.52	76 17 36.43	S 33 57 E N 43 10 E N 3 38 E	N 33 56 W S 43 10 W S 3 38 W	3, 550 1, 895 3, 215	Brannock. Cook Point Windmill. Chef.
3	38 36 33.12	76 17 29.46	S 28 05 E N 49 16 E N 0 24 E	N 28 05 W S 49 17 W S 0 24 W	3, 819 1, 468 2, 783	Brannock. Cook Point Windmill. Chef.
4	38 36 17.62	76 17 08.98	S 23 49 E N 21 04 E N 77 34 W	N 23 48 W S 21 04 W S 77 37 E	3, 111 1, 586 7, 644	Brannock. Cook Point Windmill. Jere.

MILL POINT.

(Chesapeake Bay—Off Tripps Bay—Charts Nos. 36 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 35 40.00	76 17 36.81	S 51 37 E N 25 25 E N 66 35 W	N 51 37 W S 25 26 W S 66 38 E	2,542 3,043 7,333	Brannock. Cook Point Windmill. Jere.
2	38 35 48.78	76 17 54.30	S 52 39 E N 35 49 E S 67 17 W	N 52 38 W S 35 49 W N 67 15 E	3,088 3,024 6,793	Brannock. Cook Point Windmill. Jere.
3	38 35 54.00	76 17 43.40	S 46 35 E N 33 03 E N 69 34 W	N 46 34 W S 33 03 W S 69 36 E	2,983 2,715 6,995	Brannock. Cook Point Windmill. Jere.
4	38 35 51.00	76 17 37.50	S 45 54 E N 29 08 E N 69 15 W	N 45 53 W S 29 08 W S 69 17 E	2,801 2,722 7,176	Brannock. Cook Point Windmill. Jere.

HILLS POINT.

(Chesapeake Bay—Off Entrance Little Choptank River—Charts Nos. 36 and 37.)

1	38 34 30.62	76 19 27.02	S 45 17 E N 39 42 E N 35 58 W	N 45 17 W S 39 43 W S 35 59 E	1,458 6,611 6,494	Robins. Cook Point Windmill. Jere.
2	38 34 51.17	76 20 00.00	S 48 00 E N 32 45 E N 32 48 W	N 47 59 W S 32 46 W S 32 50 E	2,569 7,397 5,428	Robins. Chef. Jere.
3	38 34 58.06	76 20 10.62	S 48 18 E N 52 16 E N 31 33 W	N 48 17 W S 52 18 W S 31 35 E	2,933 6,798 5,082	Robins. Cook Point Windmill. Jere.
4	38 35 24.58	76 19 14.73	S 14 01 E N 50 02 E N 50 18 W	N 14 01 W S 50 03 W S 50 20 E	2,932 5,086 5,379	Robins. Cook Point Windmill. Jere.
5	38 34 34.56	76 19 06.60	S 23 09 E N 36 37 E N 40 22 W	N 23 08 W S 36 39 W S 40 24 E	1,260 6,173 6,722	Robins. Cook Point Windmill. Jere.

HILLS POINT NORTH.

(Chesapeake Bay—Off Entrance Little Choptank River—Charts Nos. 36 and 37.)

1	38 34 24.41	76 21 25.20	S 22 18 E S 78 54 E N 07 10 W	N 22 18 W N 78 52 W S 07 10 E	5,815 4,244 5,508	James. Robins. Jere.
2	38 34 46.64	76 21 30.20	S 20 54 E S 69 58 E N 06 42 W	N 20 53 W N 60 56 W S 06 43 E	6,559 4,573 4,748	James. Robins. Jere.
3	38 35 01.72	76 20 25.88	S 51 21 E N 38 37 E N 28 12 W	N 51 20 W S 38 39 W S 28 13 E	3,321 7,507 4,775	Robins. Chef. Jere.
4	38 34 52.64	76 20 20.36	S 54 09 E N 36 20 E N 28 01 W	N 54 08 W S 36 22 W S 28 02 E	3,019 7,662 5,114	Robins. Chef. Jere.

Survey of Oyster Bars, Dorchester County, Md.

HILLS POINT SOUTH.

(Chesapeake Bay—Off Entrance Little Choptank River—Charts Nos. 36 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 32 34.80	76 20 25.80	S 20 38 E N 41 59 E N 13 51 W	N 20 37 W S 42 00 W S 13 52 E	1,798 3,875 9,433	James. Robins. Jere.
2	38 33 49.83	76 21 52.36	S 34 43 E N 85 56 E N 0 16 E	N 34 41 W S 85 58 W S 0 16 W	5,128 4,896 0,628	James. Robins. Jere.
3	38 34 51.17	76 20 00.00	S 48 00 E N 32 45 E N 32 48 W	N 47 59 W S 32 46 W S 32 50 E	2,569 7,397 5,428	Robins. Chef. Jere.
4	38 34 00.00	76 20 16.80	S 4 57 E N 89 50 E N 21 39 W	N 4 57 W S 89 51 W S 21 40 E	4,573 2,353 0,766	James. Robins. Jere.
5	38 33 42.30	76 20 49.25	S 17 35 E N 79 22 E N 13 23 W	N 17 34 W S 79 23 W S 13 23 E	4,152 3,269 7,078	James. Robins. Jere.
6	38 33 03.70	76 20 13.40	S 6 33 E N 49 55 E N 17 32 W	N 6 33 W S 49 56 W S 17 33 E	2,675 2,958 8,586	James. Robins. Jere.

JAMES POINT.

(Chesapeake Bay—Vicinity James Point—Chart No. 36.)

1	38 31 41.59	76 22 01.56	S 40 31 E N 88 00 E N 47 39 E	N 40 30 W S 88 01 W S 47 41 W	4,170 3,171 0,937	Skid. James. Robins.
2	38 31 42.18	76 22 32.00	S 47 47 E N 88 42 E N 51 54 E	N 47 46 W S 88 43 W S 51 56 W	4,747 3,977 7,539	Skid. James. Robins.
3	38 32 42.94	76 23 10.08	S 40 49 E S 68 33 E N 69 27 E	N 40 47 W N 68 31 W S 69 29 W	6,923 5,355 7,414	Skid. James. Robins.
4	38 33 25.78	76 22 59.76	S 54 10 E N 80 09 E N 4 00 E	N 54 08 W S 80 11 W S 4 01 W	5,811 6,768 9,966	James. Robins. Sharps Island Light.
5	38 33 23.00	76 21 58.38	S 43 01 E N 76 03 E N 1 27 E	N 43 00 W S 76 05 W S 1 27 W	4,523 5,197 7,538	James. Robins. Jere.
6	38 32 34.36	76 21 42.68	S 58 00 E N 57 59 E N 1 24 W	N 57 59 W S 58 01 W S 1 24 E	3,148 5,457 9,179	James. Robins. Jere.

TRAVERS.

(Chesapeake Bay—Vicinity James Island—Charts Nos. 36 and 38.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 28 46.52	76 21 27.48	S 65 42 E	N 65 40 W	2,920	Travers 2.
			N 33 28 E	S 33 28 W	3,276	Skid.
			N 2 08 W	S 2 08 E	16,871	Jere.
2	38 29 39.12	76 22 04.88	S 50 50 E	N 50 48 W	4,711	Travers 2.
			N 71 04 E	S 71 05 W	2,957	Skid.
			N 1 23 E	S 1 23 W	15,090	Jere.
3	38 30 11.68	76 21 53.40	S 39 25 E	N 39 24 W	5,272	Travers 2
			S 86 50 E	N 86 49 W	2,497	Skid.
			N 0 15 E	S 0 15 W	13,986	Jere.
4	38 29 47.76	76 21 39.72	S 42 25 E	N 42 24 W	4,425	Travers 2.
			N 72 35 E	S 72 36 W	2,233	Skid.
			N 1 10 W	S 1 10 E	14,799	Jere.
5	38 29 33.16	76 21 43.34	S 48 00 E	N 47 59 W	4,146	Travers 2.
			N 62 28 E	S 62 29 W	2,511	Skid.
			N 0 47 W	S 0 47 E	15,291	Jere.
6	38 29 03.00	76 21 17.52	S 53 45 E	N 53 44 W	2,972	Travers 2.
			N 35 18 E	S 35 19 W	2,669	Skid.
			N 3 07 W	S 3 08 E	16,329	Jere.

MARSHALL.

(Oyster Creek—Charts Nos. 36, 37, and 38.)

1	38 29 21.71	76 19 59.20	N 44 12 E	S 44 14 W	7,422	Ragged Point 3.
			N 7 40 W	S 7 41 E	3,036	Rede.
			N 19 00 W	S 19 01 E	1,636	Skid.
2	38 29 28.62	76 20 07.94	N 46 44 E	S 46 46 W	7,423	Ragged Point 3.
			N 3 35 W	S 3 35 E	2,781	Rede.
			N 12 55 W	S 12 55 E	1,351	Skid.
3	38 29 27.76	76 19 56.36	N 44 54 E	S 44 56 W	7,224	Ragged Point 3.
			N 9 44 W	S 9 44 E	2,844	Rede.
			N 24 16 W	S 24 17 E	1,480	Skid.

Survey of Oyster Bars, Dorchester County, Md.

OYSTER CREEK.

(Little Choptank River—Charts Nos. 36, 37, and 38.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 29 35.52	76 20 04.10	N 47 32 E N 6 11 W N 20 26 W	S 47 34 W S 6 11 E S 20 26 E	7,190 2,557 1,154	Ragged Point 3. Rede. Skid.
2	38 29 36.92	76 20 09.58	N 48 35 E N 2 59 W N 14 00 W	S 48 37 W S 2 59 E S 14 00 E	7,267 2,499 1,065	Ragged Point 3. Rede. Skid.
3	38 29 41.12	76 20 07.64	N 49 10 E N 4 25 W N 19 07 W	S 49 12 W S 4 25 E S 19 07 E	7,137 2,361 945	Ragged Point 3. Rede. Skid.
4	38 29 39.60	76 20 02.20	N 48 05 E N 7 43 W N 25 40 W	S 48 07 W S 7 43 E S 25 40 E	7,061 2,427 1,048	Ragged Point 3. Rede. Skid.

GRANGER.

(Little Choptank River—Charts Nos. 36, 37, and 38.)

1	38 30 00.84	76 19 49.14	N 85 52 E N 21 42 W N 74 07 W	S 85 51 W S 21 42 E S 74 07 E	2,653 1,818 831	Can. Rede. Skid.
2	38 30 19.44	76 19 57.56	S 81 22 E N 22 55 W S 55 16 W	N 81 23 W S 22 55 E N 55 16 E	2,902 1,153 702	Can. Rede. Skid.
3	38 30 22.59	76 19 46.56	N 55 58 E N 37 40 W S 59 46 W	S 56 00 W S 37 47 E N 59 46 E	5,840 1,208 1,005	Ragged Point 3. Rede. Skid.
4	38 30 04.26	76 19 38.61	N 88 10 E N 31 09 W N 84 03 W	S 88 11 W S 31 09 E S 84 04 E	2,369 1,838 1,085	Can. Rede. Skid.

CATORS.

(Little Choptank River—Charts Nos. 36, 37, and 38.)

1	38 30 11.58	76 19 20.12	S 84 48 E N 19 22 W S 85 06 W	N 84 47 W S 19 23 E N 85 05 E	1,885 3,335 1,575	Can. James. Skid.
2	38 30 19.24	76 19 35.42	S 79 21 E N 44 06 W S 71 20 W	N 79 20 W S 44 07 E N 71 20 E	2,323 1,487 1,228	Can. Rede. Skid.
3	38 30 40.44	76 19 12.60	N 31 00 W N 77 50 W S 57 55 W	S 31 00 E S 77 50 E N 57 55 E	2,535 1,678 2,087	James. Rede. Skid.
4	38 30 36.74	76 19 05.30	N 33 07 W N 75 24 W S 63 22 W	S 33 07 E S 75 24 E N 63 22 E	2,744 1,894 2,194	James. Rede. Skid.

HENPECK.

(Little Choptank River—Charts Nos. 36, 37, and 38.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '		
1	38 30 17.80	76 18 41.76	N 35 52 W N 65 34 W S 82 24 W	S 35 52 E S 65 35 E N 82 23 E	Yards. 3,623 2,699 2,608	James. Rede. Skid.
2	38 30 26.75	76 18 49.68	N 35 59 W N 70 04 W S 74 47 W	S 35 59 E S 70 05 E N 74 46 E	3,256 2,391 2,462	James. Rede. Skid.
3	38 30 45.98	76 18 15.24	S 68 30 W S 6 47 E S 62 21 E	N 68 29 E N 6 47 W N 62 20 W	3,533 1,340 2,221	Skid. Can. Veith.
4	38 30 38.50	76 18 03.75	S 73 49 W S 7 43 W S 64 55 E	N 73 47 E N 7 43 E N 64 54 W	3,740 1,088 1,835	Skid. Can. Veith.

SLAUGHTER CREEK.

(Entrance Slaughter Creek—Charts Nos. 36, 37, and 38.)

1	38 29 57.14	76 16 10.23	N 32 57 E N 65 23 W S 22 52 W	S 32 57 W S 65 24 E N 22 52 E	1,009 1,480 704	Pov. Veith. Torrey.
2	38 30 06.63	76 16 36.65	N 67 07 E N 65 20 W S 32 18 W	S 67 08 W S 65 20 E N 32 18 E	1,356 711 886	Pov. Veith. Moore.
3	38 30 35.68	76 16 19.76	N 12 43 W S 57 59 W S 0 37 W	S 12 43 E N 57 59 E N 0 37 E	2,899 1,289 1,949	Ragged Point 3. Veith. Torrey.
4	38 30 06.76	76 16 03.56	N 15 40 W N 79 08 W S 60 51 W	S 15 41 E S 79 09 E N 60 51 E	3,950 1,550 1,546	Ragged Point 3. Veith. Moore.

HOOPER.

(Entrance Slaughter Creek—Charts Nos. 36, 37, and 38.)

1	38 30 06.63	76 16 36.65	N 67 07 E N 65 20 W S 32 18 W	S 67 08 W S 65 20 E N 32 18 E	1,356 711 886	Pov. Veith. Moore.
2	38 31 09.96	76 16 54.94	S 4 59 W S 47 08 E N 9 58 E	N 4 59 E N 47 08 W S 9 59 W	1,846 2,365 1,697	Veith. Pov. Ragged Point 3.
3	38 30 53.60	76 16 11.60	S 45 29 W S 28 59 E N 63 35 E	N 45 28 E N 28 59 W S 63 36 W	1,836 1,208 2,439	Veith. Pov. Wool.
4	38 30 35.68	76 16 19.76	N 12 43 W S 57 59 W S 0 37 W	S 12 43 E N 57 59 E N 0 37 E	2,899 1,289 1,949	Ragged Point 3. Veith. Torrey.

Survey of Oyster Bars, Dorchester County, Md.

NINE ACRES.

(Little Choptank River—Charts Nos. 36 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 30 30.04	76 17 50.80	S 31 40 W S 69 31 E N 30 27 E	N 31 40 E N 69 30 W S 30 27 W	932 1,409 3,501	Can. Veith. Ragged Point 3.
2	38 30 38.50	76 18 03.75	S 73 49 W S 7 43 W S 64 55 E	N 73 47 E N 7 43 E N 64 54 W	3,740 1,088 1,835	Skid. Can. Veith.
3	38 30 45.98	76 18 15.24	S 68 30 W S 6 47 E S 62 21 E	N 68 29 E N 6 47 W N 62 20 W	3,533 1,340 2,221	Skid. Can. Veith.
4	38 31 04.40	76 18 13.18	S 60 10 W S 3 03 E S 49 11 E	N 60 09 E N 3 03 W N 49 10 W	3,853 1,954 2,527	Skid. Can. Veith.
5	38 31 25.00	76 17 20.60	S 61 07 W S 12 29 E S 48 46 E	N 61 06 E N 12 29 W N 48 45 W	5,408 2,403 3,210	Skid. Veith. Pov.
6	38 30 55.10	76 17 24.07	S 36 10 W S 24 33 E S 66 09 E	N 36 10 E N 24 33 W N 66 08 W	2,030 1,472 2,739	Can. Veith. Pov.

LITTLE CHOPTANK.

(Little Choptank River—Charts Nos. 36 and 37.)

1	38 30 49.58	76 18 43.36	N 48 07 W N 88 56 W S 60 53 W	S 48 08 E S 88 54 E N 60 52 E	2,794 2,415 2,910	James. Rede. Skid.
2	38 31 00.84	76 18 59.66	N 47 58 W S 80 25 W S 49 36 W	S 47 59 E N 80 24 E N 49 36 E	2,219 2,011 2,771	James. Rede. Skid.
3	38 31 28.62	76 18 41.03	S 43 37 W S 16 55 E S 63 47 E	N 43 36 E N 16 55 W N 63 45 W	3,775 2,894 5,067	Skid. Can. Pov.
4	38 31 04.40	76 18 13.18	S 60 10 W S 3 03 E S 49 11 E	N 60 09 E N 3 03 W N 49 10 W	3,853 1,954 2,527	Skid. Can. Veith.

RAGGED POINT.

(Little Choptank River—Charts Nos. 36 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 31 25.95	76 17 50.96	S 56 05 W S 29 06 E N 57 30 E	N 56 04 E N 29 06 W S 57 29 W	4,737 2,722 2,107	Skid. Veith. Ragged Point 3.
2	38 31 27.27	76 18 23.92	S 48 42 W S 42 12 E N 67 41 E	N 48 40 E N 42 11 W S 67 42 W	4,070 3,271 2,865	Skid. Veith. Ragged Point 3.
3	38 32 16.42	76 18 21.70	S 77 36 E N 11 13 W S 68 10 W	N 77 35 W S 11 13 E N 68 09 E	2,654 3,568 2,859	Ragged Point 3. Robins. James.
4	38 32 37.45	76 17 20.97	N 39 31 W S 67 25 W S 37 34 E	S 39 31 E N 67 23 E N 37 34 W	3,617 4,616 1,613	Robins. James. Ragged Point 3.
5	38 32 33.58	76 17 05.86	N 42 46 W S 70 36 W S 26 56 E	S 42 47 E N 70 34 E N 26 56 W	3,979 4,944 1,287	Robins. James. Ragged Point 3.
6	38 32 01.32	76 17 19.42	S 86 21 E N 30 18 W S 82 39 W	N 86 21 W S 30 19 E N 82 38 E	945 4,643 4,339	Ragged Point 3. Robins. James.

PEANUT HILL.

(Little Choptank River—Charts Nos. 36 and 37.)

1	38 32 16.42	76 18 21.70	S 77 36 E N 11 13 W S 68 10 W	N 77 35 W S 11 13 E N 68 09 E	2,654 3,568 2,859	Ragged Point 3. Robins. James.
2	38 32 43.02	76 19 38.07	S 17 51 W S 72 22 E N 27 02 E	N 17 50 E N 72 20 W S 27 03 W	2,059 4,842 2,922	James. Ragged Point 3. Robins.
3	38 32 55.00	76 18 55.58	S 36 37 W S 61 48 E N 5 17 E	N 36 36 E N 61 47 W S 5 17 W	2,945 3,959 2,208	James. Ragged Point 3. Robins.
4	38 32 46.79	76 18 49.44	S 42 36 W S 64 25 E N 00 57 E	N 42 35 E N 64 24 W S 00 57 W	2,836 3,689 2,476	James. Ragged Point 3. Robins.
5	38 32 47.28	76 18 09.44	N 22 29 W S 54 46 W S 54 37 E	S 22 30 E N 54 45 E N 54 36 W	2,662 3,647 2,781	Robins. James. Ragged Point 3.
6	38 32 26.44	76 18 12.20	S 68 49 E N 16 39 W S 64 15 W	N 68 48 W S 16 39 E N 64 14 E	2,510 3,300 3,226	Ragged Point 3. Robins. James.

Survey of Oyster Bars, Dorchester County, Md.

RAGGED POINT FLATS.

(Little Choptank River—Charts Nos. 36 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 32 33.58	76 17 05.86	N 42 46 W S 70 36 W S 26 56 E	S 42 47 E N 70 34 E N 26 56 W	3,979 4,944 1,287	Robins. James. Ragged Point 3.
2	38 32 37.45	76 17 20.97	N 39 31 W S 67 25 W S 37 34 E	S 39 31 E N 67 23 E N 37 34 W	3,617 4,616 1,613	Robins. James. Ragged Point 3.
3	38 33 08.88	76 17 33.50	N 48 42 W S 54 13 W S 29 22 E	S 48 43 E N 54 12 E N 29 21 W	2,622 4,845 2,683	Robins. James. Ragged Point 3.
4	38 33 35.79	76 17 19.95	N 70 32 W S 48 55 W S 16 25 E	S 70 32 E N 48 53 E N 16 25 W	2,469 5,691 3,384	Robins. James. Ragged Point 3.
5	38 32 55.80	76 16 56.50	N 53 38 W S 64 02 W S 10 01 E	S 53 39 E N 64 00 E N 10 01 W	3,662 5,463 1,927	Robins. James. Ragged Point 3.

COW ISLAND.

(Little Choptank River—Charts Nos. 36 and 37.)

1	38 33 03.34	76 18 15.64	N 24 00 W S 46 46 W S 48 30 E	S 24 01 E N 46 45 E N 48 29 W	2,100 3,863 3,247	Robins. James. Ragged Point 3.
2	38 33 12.32	76 18 18.86	N 25 29 W S 42 47 W S 45 44 E	S 25 31 E N 42 46 E N 45 43 W	1,780 4,018 3,516	Robins. James. Ragged Point 3.
3	38 33 21.90	76 17 51.22	N 40 17 W S 46 37 W S 32 43 E	S 40 17 E N 46 38 E N 32 43 W	1,981 4,763 3,294	Robins. James. Ragged Point 3.
4	38 33 08.88	76 17 33.50	N 48 42 W S 54 13 W S 29 22 E	S 48 43 E N 54 12 E N 29 21 W	2,622 4,845 2,683	Robins. James. Ragged Point 3.

BALD EAGLE.

(Little Choptank River—Charts Nos. 36 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 33 08.88	76 17 33.50	N 48 42 W S 54 13 W S 29 22 E	S 48 42 E N 54 12 E N 29 21 W	2,622 4,845 2,683	Robins. James. Ragged Point 3.
2	38 33 21.90	76 17 51.22	N 49 17 W S 46 37 W S 32 43 E	S 49 17 E N 46 38 E N 32 43 W	1,981 4,763 3,294	Robins. James. Ragged Point 3.
3	38 33 46.72	76 17 52.96	N 72 38 W S 39 44 W S 26 52 E	S 72 39 E N 39 43 E N 26 51 W	1,524 5,343 4,052	Robins. James. Ragged Point 3.
4	38 33 35.79	76 17 19.95	N 70 32 W S 48 55 W S 16 25 E	S 70 33 E N 48 53 E N 16 25 W	2,469 5,691 3,384	Robins. James. Ragged Point 3.

CORNERS WHART.

(Outer Choptank River—Chart No. 37.)

1	38 36 44.62	76 13 08.16	N 85 54 E N 69 52 E N 37 28 W	S 85 54 W S 69 54 W S 37 28 E	1,645 4,794 2,626	Corner. Large Water Tank. Dot.
2	38 36 55.18	76 13 39.80	S 84 30 E N 76 23 E N 23 45 W	N 84 29 W S 76 25 W S 23 45 E	2,489 5,492 1,888	Corner. Large Water Tank. Dot.
3	38 37 17.05	76 13 31.38	S 66 36 E N 83 48 E N 44 47 W	N 66 35 W S 83 50 W S 44 47 E	2,457 5,145 1,395	Corner. Large Water Tank. Dot.
4	38 37 04.90	76 12 59.10	S 68 00 E N 77 17 E N 52 38 W	N 68 00 W S 77 19 W S 52 38 E	1,519 4,377 2,301	Corner. Large Water Tank. Dot.

LOGANS HILL.

(Outer Choptank River—Chart No. 37.)

1	38 38 19.84	76 12 56.18	S 69 32 E N 54 34 E N 20 44 E	N 69 31 W S 54 35 W S 20 44 W	4,466 3,590 4,102	Large Water Tank. Choptank River Light. Benoni 2.
2	38 39 05.04	76 13 38.98	S 68 56 W S 16 26 W N 82 11 E	N 68 54 E N 16 25 E S 82 13 W	6,512 2,764 4,094	Chef. Dot. Choptank River Light.
3	38 38 48.40	76 11 45.22	Thence along county boundary as delineated on Chart No. 37			to corner No. 3.
			S 49 58 E N 43 09 E N 8 24 W	N 49 57 W S 43 10 W S 8 24 E	3,479 1,533 2,905	Castle. Choptank River Light. Benoni 2.

Survey of Oyster Bars, Dorchester County, Md.

TODD POINT.

(Outer Choptank River—Chart No. 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 37 44.92	76 15 34.76	N 83 08 W S 52 43 W N 88 44 E	S 83 09 E N 52 42 E S 88 45 W	3,037 2,417 2,281	Chef. Cook Point Windmill. Dot.
2	38 38 08.08	76 16 12.40	S 78 18 W S 22 26 W S 77 25 E	N 78 17 E N 22 26 E N 77 24 W	2,061 2,429 3,357	Chef. Cook Point Windmill. Dot.
3	38 38 27.26	76 16 09.52	N 63 37 W S 63 03 W S 66 42 E	S 63 40 E N 63 03 E N 66 41 W	7,532 2,350 3,484	Black. Chef. Dot.
4	38 38 25.41	76 15 29.22	S 72 24 W S 58 22 E N 74 49 E	N 72 23 E N 58 21 W S 74 52 W	3,317 2,508 7,224	Chef. Dot. Choptank River Light.
5	38 38 59.43	76 15 27.58	S 56 08 W S 40 20 E N 83 52 E	N 56 07 E N 40 20 W S 83 55 W	3,859 3,230 6,968	Chef. Dot. Choptank River Light.
6	38 39 04.40	76 16 03.56	N 73 08 W S 44 12 W S 49 10 E	S 73 11 E N 44 11 E N 49 09 W	7,216 3,232 4,022	Black. Chef. Dot.
7	38 39 22.52	76 16 00.60	N 78 01 W S 38 31 W S 42 27 E	S 78 04 E N 38 30 E N 42 26 W	7,139 3,743 4,392	Black. Chef. Dot.
8	38 39 15.33	76 15 07.00	S 54 23 W S 27 17 E N 88 08 E	N 54 21 E N 27 17 W S 88 10 W	4,612 3,374 6,388	Chef. Dot. Choptank River Light.
9	38 39 58.32	76 15 41.88	N 41 38 E N 11 48 W N 63 59 W	S 41 39 W S 11 48 E S 64 01 E	4,344 4,356 6,387	Roys. Nelson 3. Bar.
10	38 39 08.00	76 13 46.22	Thence along county boundary as delineated on Chart No. 37 to corner No. 10.			
			N 83 52 E N 51 26 E N 1 59 W	S 83 54 W S 51 27 W S 1 59 E	4,273 3,549 4,940	Choptank River Light. Benoni 2. Roys.
11	38 38 27.40	76 13 47.20	S 79 39 W S 22 13 W S 38 36 E	N 79 36 E N 22 12 E N 38 35 W	5,957 1,493 4,285	Chef. Dot. Corner.

ALONG SHORE.

(Little Choptank River—Charts Nos. 37 and 38.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 30 00.96	76 15 45.59	N 8 14 W N 21 06 W S 73 01 W	S 8 14 E S 21 07 E N 73 00 E	725 4,286 1,909	Pov. Ragged Point 3. Moore.
2	38 30 12.16	76 15 58.60	N 35 16 E N 18 19 W S 57 45 W	S 35 16 W S 18 19 E N 57 44 E	417 3,813 1,752	Pov. Ragged Point 3. Moore.
3	38 30 29.02	76 15 52.95	N 23 50 W S 75 43 W S 47 20 W	S 23 50 E N 75 43 E N 47 19 E	3,336 1,860 2,219	Ragged Point 3. Veith. Moore.
4	38 30 35.38	76 15 37.42	N 31 48 W S 73 05 W S 49 56 W	S 31 49 E N 73 04 E N 49 55 E	3,339 2,315 2,669	Ragged Point 3. Veith. Moore.
5	38 31 14.82	76 15 16.20	N 12 37 E N 57 00 W S 26 28 W	S 12 37 W S 57 01 E N 26 28 E	2,264 2,768 1,979	Hudson. Ragged Point 3. Pov.
6	38 31 13.00	76 15 10.38	N 8 31 E N 57 38 W S 31 13 W	S 8 31 W S 57 39 E N 31 13 E	2,295 2,931 2,000	Hudson. Ragged Point 3. Pov.
Thence from corner No. 6 along the mean low water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
7	38 30 33.14	76 15 35.20	N 31 58 W S 75 16 W S 51 59 W	S 31 59 E N 75 15 E N 51 58 E	3,434 2,351 2,662	Ragged Point 3. Veith. Moore.
8	38 30 22.26	76 15 49.51	N 19 04 E S 83 04 W S 28 49 W	S 19 05 W N 83 03 E N 28 48 E	4,213 1,908 1,707	Hudson. Veith. Torrey.
9	38 30 13.42	76 15 53.64	N 20 23 W N 87 51 W S 58 47 W	S 20 24 E S 87 51 E N 58 46 E	3,818 1,786 1,886	Ragged Point 3. Veith. Moore.
Thence from corner No. 9 along the mean low water line of the shore to corner No. 10, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
10	38 30 05.66	76 15 45.58	N 10 32 W N 21 54 W S 68 36 W	S 10 32 E S 21 54 E N 68 35 E	570 4,138 1,962	Pov. Ragged Point 3. Moore.

Survey of Oyster Bars, Dorchester County, Md.

SUSQUEHANNA.

(Little Choptank River—Chart No. 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 31 01.62	76 15 35.10	N 20 33 E N 43 00 W S 16 03 W	S 20 33 W S 43 01 E N 16 03 E	2,835 2,669 1,381	Hudson. Ragged Point 3. Pov.
2	38 31 15.74	76 15 54.62	N 34 46 E N 41 26 W S 40 51 W	S 34 46 W S 41 27 E N 40 50 E	2,651 1,970 2,689	Hudson. Ragged Point 3. Veith
3	38 31 48.07	76 15 17.22	S 16 28 W S 44 42 E N 25 36 E	N 16 28 E N 44 41 W S 25 36 W	3,017 1,058 1,206	Pov. Wool. Hudson.
4	38 31 36.00	76 15 02.28	S 26 43 W S 45 16 E N 61 53 E	N 26 43 E N 45 16 W S 61 54 W	2,784 489 2,935	Pov. Wool. Mac.

LITTLE POLLARD.

(Little Choptank River—Chart No. 37.)

1	38 31 56.50	76 16 08.94	S 09 12 E S 63 53 E N 66 59 E	N 09 12 W N 63 52 W S 66 59 W	3,220 2,353 2,055	Pov. Wool. Hudson.
2	38 32 01.68	76 16 17.82	S 12 37 E S 62 44 E N 73 31 E	N 12 36 W N 62 43 W S 73 32 W	3,435 2,642 2,217	Pov. Wool. Hudson.
3	38 32 13.23	76 16 15.16	S 10 18 E S 54 55 E N 83 21 E	N 10 17 W N 54 54 W S 83 22 W	3,804 2,784 2,070	Pov. Wool. Hudson.
4	38 32 29.67	76 15 49.02	S 22 35 W S 36 46 E S 57 21 E	N 22 34 E N 36 45 W N 57 20 W	4,904 2,689 3,426	Veith. Wool. Tobacco Stick.
5	38 32 20.52	76 15 39.58	S 67 26 W S 35 54 E S 89 41 E	N 67 25 E N 35 53 W N 89 41 W	1,843 2,278 1,113	Ragged Point 3. Wool. Hudson.

CASON.

(Little Choptank River—Chart No. 37.)

1	38 31 30.20	76 14 38.82	N 51 15 E N 16 21 W N 73 23 W	S 51 16 W S 16 21 E S 73 24 E	2,523 1,762 3,456	Mac. Hudson. Ragged Point 3.
2	38 32 01.19	76 15 08.99	S 88 43 W S 23 45 E S 63 45 E	N 88 42 E N 23 45 W N 63 45 W	2,513 1,395 2,007	Ragged Point 3. Wool. Tobacco Stick.
3	38 32 13.16	76 14 37.54	S 10 54 W S 36 51 E N 86 09 E	N 10 54 E N 36 50 W S 86 10 W	1,627 1,613 1,938	Wool. Tobacco Stick. Mac.
4	38 31 50.58	76 14 17.50	S 45 06 W S 39 30 E N 57 33 E	N 45 05 E N 39 29 W S 57 34 W	1,184 686 1,662	Wool. Tobacco Stick. Mac.

TOBACCO STICK.

(Little Choptank River—Chart No. 37.)

Corner of bar.	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 31 30.20	76 14 38.82	N 51 15 E N 16 21 W N 73 23 W	S 51 16 W S 16 21 E S 73 24 E	2,523 1,762 3,456	Mac. Hudson. Ragged Point 3.
2	38 31 50.58	76 14 17.50	S 45 06 W S 39 30 E N 57 33 E	N 45 05 E N 39 29 W S 57 34 W	1,184 686 1,662	Wool. Tobacco Stick. Mac.
3	38 31 57.85	76 13 53.18	N 49 33 E N 66 01 W S 53 54 W	S 49 33 W S 66 02 E N 53 54 E	997 1,866 1,835	Mac. Hudson. Wool.
4	38 31 43.25	76 13 07.52	N 66 47 W S 78 44 W S 3 40 W	S 66 48 E N 78 44 E N 3 39 E	3,171 1,445 2,479	Hudson. Tobacco Stick. Madison Southern M. E. Church Spire.

BUTTERPOT.

(Little Choptank River—Chart No. 37.)

1	38 32 06.04	76 13 46.40	S 20 15 W N 57 23 E S 15 57 W	N 20 15 E S 57 23 W N 15 57 E	1,120 688 1,448	Tobacco Stick. Mac. Greenwell.
2	38 32 06.26	76 14 05.62	S 6 33 E N 71 33 E N 4 35 E	N 6 33 W S 71 33 W S 4 35 W	1,065 1,147 1,389	Tobacco Stick. Mac. Greenwell.
3	38 32 23.40	76 14 05.62	S 4 15 E S 78 50 E N 41 26 E	N 4 15 W N 78 50 W S 41 26 W	1,640 1,109 1,861	Tobacco Stick. Mac. Ross.
4	38 32 23.22	76 13 33.90	N 69 42 E N 15 37 E N 41 54 W	S 69 42 W S 15 37 W S 41 54 E	1,719 1,456 1,091	Swep. Ross. Greenwell.

HUDSON.

(Little Choptank River—Hudson Creek—Chart No. 37.)

1	38 32 16.77	76 14 22.62	S 22 15 W S 22 03 E N 89 40 E	N 22 14 E N 22 02 W S 89 41 W	1,857 1,524 1,539	Wool. Tobacco Stick. Mac.
2	38 32 39.68	76 14 56.00	S 3 35 W N 81 09 E N 07 04 W	N 3 35 E S 81 10 W S 07 04 E	654 599 639	Hudson. Louise. Jenifer.
3	38 32 43.46	76 14 50.61	S 13 15 W S 84 20 E N 22 01 E	N 13 15 E N 84 20 W S 22 01 W	801 452 483	Hudson. Louise. Carrie.
4	38 32 30.09	76 14 32.40	S 76 13 E N 4 30 W S 63 43 W	N 76 13 W S 4 30 E N 63 43 E	1,850 417 743	Mac. Louise. Hudson.
5	38 32 23.40	76 14 05.62	S 4 15 E S 78 50 E N 41 26 E	N 4 15 W N 78 50 W S 41 26 W	1,640 1,109 1,861	Tobacco Stick. Mac. Ross.

Survey of Oyster Bars, Dorchester County, Md.

ROSS.

(Little Choptank River—Hudson Creek—Chart No. 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "		
1	38 32 49.24	76 14 47.65	S 58 08 E N 22 07 E N 43 50 W	N 58 08 W S 22 07 W S 43 50 E	Yards. 436 273 433	Louise. Carrie. Jennifer.
2	38 32 49.40	76 14 53.20	S 65 31 E N 45 12 E N 26 28 W	N 65 30 W S 45 13 W S 26 28 E	569 352 343	Louise. Carrie. Jennifer.
3	38 33 27.42	76 14 53.12	S 35 08 W S 12 55 W S 76 55 E	N 35 08 E N 12 54 E N 76 55 W	230 717 252	Mitchell. Henry. Back.
4	38 33 27.04	76 14 48.46	S 55 34 W S 22 27 W N 70 04 E	N 55 34 E N 22 27 E S 70 04 W	309 743 129	Mitchell. Henry. Back.

McKEILS POINT.

(Little Choptank River—Chart No. 37.)

1	38 32 23.22	76 13 33.90	N 69 42 E N 15 37 E N 41 54 W	S 69 42 W S 15 37 W S 41 54 E	1,719 1,456 1,091	Swept. Ross. Greenwell.
2	38 32 23.40	76 14 05.62	S 4 15 E S 78 50 E N 41 26 E	N 4 15 W N 78 50 W S 41 26 W	1,640 1,109 1,861	Tobacco Stick. Mac. Ross.
3	38 32 46.11	76 13 59.68	S 43 30 E N 85 27 E N 71 23 E	N 43 30 W S 85 28 W S 71 24 W	1,352 1,787 2,709	Mac. Town. David.
4	38 32 49.54	76 13 19.24	N 87 51 E N 0 23 E S 86 10 W	S 87 51 W S 0 23 W N 86 10 E	711 514 1,120	Town. Ross. Greenwell.
5	38 32 33.64	76 13 10.42	N 76 06 E N 12 22 W N 71 09 W	S 76 06 W S 12 22 E S 71 09 E	1,020 1,075 1,427	Swept. Ross. Greenwell.

TOWN.

(Little Choptank River—Chart No. 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 32 33.64	76 13 10.42	N 76 06 E N 12 22 W N 71 09 W	S 76 06 W S 12 22 E S 71 09 E	1,020 1,075 1,427	Swept. Ross. Greenwell.
2	38 32 49.54	76 13 19.24	N 87 51 E N 0 23 E S 86 10 W	S 87 51 W S 0 23 W N 86 10 E	711 514 1,120	Town. Ross. Greenwell.
3	38 33 06.94	76 12 53.07	N 78 31 E N 17 26 E S 83 58 W	S 78 31 W S 17 26 W N 83 58 E	820 668 693	David. Lee. Ross.
4	38 32 49.12	76 12 54.85	N 11 17 E N 50 35 W S 88 02 W	S 11 17 W S 50 35 E N 88 01 E	1,263 832 1,765	Lee. Ross. Greenwell.
5	38 32 40.16	76 12 55.80	N 82 06 W S 18 29 W S 40 29 E	S 82 07 E N 18 29 E N 40 29 W	1,759 691 1,129	Greenwell. Laney. Hugh.

BRUMELL.

(Little Choptank River—Chart No. 37.)

1	38 32 49.12	76 12 54.85	N 11 17 E N 50 35 W N 88 02 W	S 11 17 W S 50 35 E N 88 01 E	1,263 832 1,765	Lee. Ross. Greenwell.
2	38 33 06.94	76 12 53.07	N 78 31 E N 17 26 E S 83 58 W	S 78 31 W S 17 26 W N 83 58 E	820 668 693	David. Lee. Ross.
3	38 33 22.38	76 12 59.57	S 9 56 E N 72 36 E N 10 07 W	N 9 56 W S 72 36 W S 10 07 E	1,098 390 936	Town. Lee. Phil.
4	38 33 30.84	76 12 18.30	S 76 50 W S 10 19 W S 62 56 E	N 76 49 E N 10 19 E N 62 56 W	740 654 1,045	Lee. David. Layton.
5	38 33 40.34	76 12 08.92	S 20 47 W S 40 37 E S 71 50 E	N 20 47 E N 40 37 W N 71 50 W	1,030 1,049 1,567	David. Layton. Adam.
6	38 33 40.06	76 11 51.16	S 41 14 W S 15 07 E S 64 49 E	N 41 13 E N 15 07 W N 64 49 W	1,267 815 1,125	David. Layton. Adam.
7	38 33 24.39	76 12 22.72	N 85 22 W S 0 00 W S 76 09 E	S 85 22 E N 0 00 E N 76 09 W	606 425 1,079	Lee. David. Layton.
8	38 33 06.62	76 12 30.04	N 45 04 E N 32 18 W S 87 16 W	S 45 05 W S 32 18 E N 87 15 E	1,603 767 1,301	Solomon. Lee. Ross.

Survey of Oyster Bars, Dorchester County, Md.

CHERRY ISLAND.

(Little Choptank River—Chart No. 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 33 37.86	76 12 49.59	N 34 55 E N 47 01 W S 35 01 W	S 34 55 W S 47 01 E N 35 01 E	268 585 1,363	Cherry Island Water Tank. Phil. Ross.
2	38 33 43.24	76 13 00.47	S 20 50 W S 34 01 E N 43 26 E	N 20 50 E N 34 01 W S 43 26 W	1,388 709 821	Ross. Lee. Dupont.
3	38 33 55.38	76 12 59.62	S 20 34 E S 48 24 E N 70 57 E	N 20 33 W N 48 24 W S 70 58 W	1,064 560 573	Lee. Cherry Island Water Tank. Dupont.
4	38 33 52.58	76 12 50.28	S 7 58 E S 31 43 E N 46 20 E	N 7 58 W N 31 43 W S 46 20 W	911 326 408	Lee. Cherry Island Water Tank. Dupont.
5	38 33 45.11	76 12 53.06	N 34 38 E N 65 08 W S 26 54 W	S 34 38 W S 65 08 E N 26 53 E	647 371 1,524	Dupont. Phil. Ross.
6	38 33 42.06	76 12 46.30	N 63 27 W S 34 39 W S 2 11 E	S 63 27 E N 34 39 E N 2 11 W	576 1,528 548	Phil. Ross. Lee.

JONES.

(Little Choptank River—Chart No. 37.)

1	38 33 19.34	76 11 33.10	N 45 53 E N 27 56 W N 83 28 W	S 45 53 W S 27 56 E S 83 28 E	1,013 795 1,929	Seth. Solomon. Lee.
2	38 33 28.68	76 11 35.12	N 63 27 E N 39 27 W S 65 42 W	S 63 27 W S 39 27 E N 65 41 E	873 503 1,382	Seth. Solomon. David.
3	38 33 29.68	76 11 28.34	N 59 20 E N 54 36 W S 41 53 W	S 59 20 W S 54 37 E N 41 53 E	699 611 586	Seth. Solomon. Layton.
4	38 33 20.58	76 11 26.24	N 39 26 E N 39 59 W S 73 49 W	S 39 26 W S 39 59 E N 73 49 E	860 863 466	Seth. Solomon. Layton.

PATTISON.

(Little Choptank River—Chart No. 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 33 41.76	76 10 41.62	S 88 15 W S 85 25 W S 56 55 W	N 88 14 E N 85 25 E N 56 55 E	1,737 638 982	Solomon. Seth. Adam.
2	38 33 44.34	76 10 50.16	S 84 41 W S 71 22 W S 43 46 W	N 84 41 E N 71 21 E N 43 46 E	1,516 433 863	Solomon. Seth. Adam.
3	38 33 51.96	76 10 42.26	S 77 00 W S 57 28 W S 42 29 W	N 76 59 E N 57 28 E N 42 29 E	1,764 734 1,193	Solomon. Seth. Adam.

BARN POINT.

(Little Choptank River—Fishing Creek—Chart No. 37.)

1	38 32 06.16	76 12 59.56	S 63 01 E N 70 55 E N 30 57 E	N 63 01 W S 70 55 W S 30 58 W	1,222 881 1,367	Doctor. Hugh. Swep.
2	38 32 29.30	76 12 59.39	S 39 06 E N 60 44 E N 23 35 W	N 39 05 W S 60 44 W S 23 35 E	1,719 801 1,305	Doctor. Swep. Ross.
3	38 32 30.62	76 12 25.70	N 50 50 W S 71 48 W S 32 39 W	S 50 51 E N 71 48 E N 32 39 E	1,824 1,070 1,456	Ross. Laney. Eleanor.
4	38 32 07.38	76 12 37.00	N 5 20 E N 57 55 W S 47 44 W	S 5 20 W S 57 56 E N 47 44 E	1,135 846 657	Swep. Laney. Eleanor.

SALTWORK.

(Little Choptank River—Fishing Creek—Chart No. 37.)

1	38 31 54.70	76 12 16.39	S 33 34 E N 63 44 E N 24 45 W	N 33 34 W S 63 45 W S 24 45 E	897 597 743	Tom. Etta. Hugh.
2	38 32 00.92	76 12 40.06	N 87 19 E N 34 13 E N 43 38 W	S 87 19 W S 34 13 W S 43 38 E	1,165 562 922	Etta. Hugh. Laney.
3	38 32 07.38	76 12 37.00	N 5 20 E N 57 55 W S 47 44 W	S 5 20 W S 57 56 E N 47 44 E	1,135 846 657	Swep. Laney. Eleanor.
4	38 32 02.54	76 12 13.75	S 75 49 W S 16 25 W S 45 18 E	N 75 48 E N 16 25 E N 45 18 W	1,136 451 675	Eleanor. Doctor. Mary.

Survey of Oyster Bars, Dorchester County, Md.

FISHING CREEK.

(Little Choptank River—Fishing Creek—Chart No. 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
° ' "	° ' "	° ' "	° ' "	° ' "		
1	38 31 35.43	76 12 13.22	S 88 50 E N 46 38 E N 16 02 W	N 88 49 W S 46 38 W S 16 02 E	1,449 640 502	Austin. Mary. Doctor.
2	38 31 54.70	76 12 16.39	S 33 34 E N 63 44 E N 24 45 W	N 33 34 W S 63 45 W S 24 45 E	897 597 743	Tom. Etta. Hugh.
3	38 32 02.54	76 12 13.75	S 75 49 W S 16 25 W S 45 18 E	N 75 48 E N 16 25 E N 45 18 W	1,136 451 675	Eleanor. Doctor. Mary.
4	38 31 53.92	76 12 02.43	N 89 30 W S 71 33 W S 9 54 E	S 89 29 E N 71 32 E N 9 54 W	1,402 447 732	Eleanor. Doctor. Tom.
5	38 31 36.00	76 11 50.84	S 86 44 E N 16 51 W N 57 41 W	N 86 43 W S 16 51 E S 57 41 E	857 440 865	Austin. Mary. Doctor.

GRAPEVINE.

(Little Choptank River—Fishing Creek—Chart No. 37.)

1	38 31 38.00	76 11 16.16	N 67 40 E N 23 42 E N 71 21 W	S 67 40 W S 23 42 W S 71 21 E	883 300 1,105	Kirby. Neil. Mary.
2	38 31 44.60	76 11 16.12	S 69 45 W S 10 43 W N 82 07 E	N 69 44 E N 10 43 E S 82 07 W	1,173 344 823	Tom. Austin. Kirby.
3	38 31 45.98	76 10 45.86	S 66 00 W S 2 23 E N 67 01 E	N 66 00 E N 2 23 W S 67 01 W	947 961 992	Austin. Church Creek (No. 1. West) Paul.
4	38 31 39.04	76 10 45.65	N 55 36 E N 1 37 E N 70 48 W	S 55 37 W S 1 37 W S 70 48 E	1,100 301 728	Paul. Kirby. Neil.

BRIDGE.

(Slaughter Creek—Chart No. 38.)

1	38 28 13.02	76 17 27.61	S 37 00 E N 48 45 E N 10 46 W	N 36 59 W S 48 45 W S 10 46 E	646 911 717	Finish. Noble. Harrington.
2	38 28 13.55	76 17 32.20	S 7 05 W N 54 09 E N 1 02 W	N 7 05 E S 54 09 W S 1 02 E	566 995 688	Taylor. Noble. Harrington.
3	38 28 19.52	76 17 30.80	S 7 58 W N 63 38 E N 5 49 W	N 7 58 E S 63 38 W S 5 49 E	770 860 489	Taylor. Noble. Harrington.
4	38 28 19.43	76 17 26.28	S 25 47 E N 59 23 E N 19 06 W	N 25 46 W S 59 23 W S 19 07 E	814 756 517	Finish. Noble. Harrington.

PUNCH ISLAND CREEK.

(Chesapeake Bay off Punch Island Creek—Chart No. 38.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 23 56.04	76 19 13.20	S 70 15 E N 5 58 W S 75 21 W	N 70 14 W S 5 59 E N 75 18 E	3,746 8,641 6,094	Dunnock. Travers 2. Cove Point Light.
2	38 25 38.36	76 20 01.28	N 4 10 E S 42 47 W S 45 31 E	S 4 11 W N 42 45 E N 45 29 W	5,157 6,800 6,730	Travers 2. Cove Point Light. Dunnock.
3	38 26 37.92	76 19 31.38	N 7 35 W S 37 43 W S 30 48 E	S 7 35 E N 37 41 E N 30 46 W	3,163 8,848 7,828	Travers 2. Cove Point Light. Dunnock.
4	38 24 28.52	76 17 54.30	N 21 45 W S 71 44 W S 31 14 E	S 21 46 E N 71 40 E N 31 13 W	8,073 8,413 2,760	Travers 2. Cove Point Light. Dunnock.

STONE PILE.

(Chesapeake Bay off Barren Island—Chart No. 39.)

1	38 20 14.08	76 17 00.20	S 53 49 E N 70 50 E N 0 03 W	N 53 48 W S 70 49 W S 0 03 E	2,452 1,741 6,237	South. North. Dunnock.
2	38 20 36.20	76 17 00.60	S 42 17 E S 84 00 E N 0 04 E	N 42 16 W N 83 59 W S 0 04 W	2,965 1,664 5,475	South. North. Dunnock.
3	38 20 42.48	76 16 37.06	S 29 34 E S 69 28 E N 6 43 W	N 29 33 W N 69 28 W S 6 43 E	2,765 1,100 5,298	South. North. Dunnock.
4	38 20 15.24	76 16 44.80	S 46 34 E N 66 41 E N 3 50 W	N 46 33 W S 66 41 W S 3 50 E	2,162 1,345 6,194	South. North. Dunnock.

NEW DISCOVERY.

(Chesapeake Bay off Barren Island—Chart No. 39.)

1	38 17 36.82	76 16 29.76	N 83 28 E N 16 53 E N 85 30 W	S 83 30 W S 16 54 W S 85 33 E	6,554 4,029 8,928	Bridge. South. Cedar Point Light.
2	38 17 38.00	76 16 48.24	N 84 14 E N 23 32 E N 85 30 W	S 84 17 W S 23 32 W S 85 33 E	7,038 4,161 8,435	Bridge. South. Cedar Point Light.
3	38 18 29.32	76 16 48.16	S 81 41 E N 38 27 E S 82 46 W	N 81 38 W S 38 27 W N 82 43 E	7,074 2,668 8,479	Bridge. South. Cedar Point Light.
4	38 18 30.14	76 16 29.98	S 80 50 E N 29 45 E S 82 58 W	N 80 48 W S 29 45 W N 82 55 E	6,602 2,370 8,961	Bridge. South. Cedar Point Light.

Survey of Oyster Bars, Dorchester County, Md.

HORSE POINT CHANNEL.

(Tar Bay—Charts Nos. 39 and 40.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 17 51.82	76 13 39.72	S 23 04 W N 83 03 E N 0 13 W	N 23 03 E S 83 04 W S 0 13 E	5,460 2,008 2,258	Hooper Island Light. Bridge. [Spire. Mount Zion M. E. Church
2	38 18 15.04	76 14 06.06	S 13 53 W S 78 39 E N 25 07 E	N 13 53 E N 78 38 W S 25 07 W	5,993 2,747 1,629	Hooper Island Light. Bridge. [Spire. Mount Zion M. E. Church
3	38 18 21.82	76 13 58.40	S 15 12 W S 72 50 E N 21 23 E	N 15 11 E N 72 49 W S 21 23 W	6,265 2,605 1,339	Hooper Island Light. Bridge. [Spire. Mount Zion M. E. Church
4	38 17 58.08	76 13 30.06	S 24 33 W N 88 57 E N 7 22 W	N 24 32 E S 88 58 W S 7 22 E	5,767 1,737 2,065	Hooper Island Light. Bridge. [Spire. Mount Zion M. E. Church

WARE.

(Chesapeake Bay—Off Middle Hooper Island—Charts Nos. 39 and 40.)

1	38 17 07.00	76 12 30.44	N 26 08 W S 48 29 W S 41 29 E	S 26 08 E N 48 27 E N 41 28 W	4,198 5,317 4,076	Mount Zion M. E. Church Spire. Hooper Island Light. Hoopersville Methodist Church Cupola.
2	38 17 09.85	76 12 42.24	N 22 41 W S 45 22 W S 43 44 E	S 22 41 E N 45 21 E N 43 43 W	3,982 5,153 4,359	Mount Zion M. E. Church Spire. Hooper Island Light. Hoopersville Methodist Church Cupola.
3	38 17 19.64	76 12 39.00	N 25 52 W S 43 32 W S 40 04 E	S 25 53 E N 43 31 E N 40 03 W	3,716 5,448 4,547	Mount Zion M. E. Church Spire. Hooper Island Light. Hoopersville Methodist Church Cupola.
4	38 17 16.00	76 12 27.55	N 29 03 W S 46 40 W S 38 00 E	S 29 04 E N 46 39 E N 37 59 W	3,964 5,578 4,260	Mount Zion M. E. Church Spire. Hooper Island Light. Hoopersville Methodist Church Cupola.

WHITE WOOD.

(Tar Bay—Chart No. 39.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 18 42.04	76 14 17.60	S 9 33 W	N 9 32 E	6,822	Hooper Island Light.
			N 60 29 E	S 60 29 W	1,147	Mount Zion M. E. Church Spire.
			N 16 13 E	S 16 13 W	2,597	Hosier Memorial Church Spire.
2	38 18 52.52	76 14 23.00	S 7 57 W	N 7 56 E	7,150	Hooper Island Light.
			N 79 29 E	S 79 30 W	1,161	Mount Zion M. E. Church Spire.
			N 22 05 E	S 22 05 W	2,311	Hosier Memorial Church Spire.
3	38 18 55.92	76 14 14.60	S 9 33 W	N 9 33 E	7,298	Hooper Island Light.
			N 83 58 E	S 83 58 W	924	Mount Zion M. E. Church Spire.
			N 17 40 E	S 17 40 W	2,127	Hosier Memorial Church Spire.
4	38 18 45.56	76 14 08.52	S 11 20 W	N 11 20 E	6,983	Hooper Island Light.
			N 59 28 E	S 59 28 W	879	Mount Zion M. E. Church Spire.
			N 11 31 E	S 11 31 W	2,425	Hosier Memorial Church Spire.

TAR BAY.

(Tar Bay—Chart No. 39.)

1	38 19 51.60	76 14 40.56	S 42 05 E	N 42 05 W	2,399	Mount Zion M. E. Church Spire.
			N 83 38 E	S 83 38 W	1,343	Hosier Memorial Church
			N 17 34 E	S 17 34 W	2,064	Mint. [Spire.
2	38 20 00.50	76 14 52.44	S 42 45 E	N 42 44 W	2,835	Mount Zion M. E. Church Spire.
			S 84 46 E	N 84 46 W	1,657	Hosier Memorial Church
			N 29 22 E	S 29 22 W	1,913	Mint. [Spire.
3	38 20 22.52	76 14 25.54	S 5 12 W	N 5 12 E	10,157	Hooper Island Light.
			S 46 20 E	N 46 19 W	1,294	Hosier Memorial Church
			N 13 36 E	S 13 36 W	951	Mint. [Spire.
4	38 20 13.88	76 14 14.80	S 7 00 W	N 6 59 E	9,898	Hooper Island Light.
			S 47 13 E	N 47 13 W	886	Hosier Memorial Church
			N 2 54 W	S 2 54 E	1,217	Mint. [Spire.

Survey of Oyster Bars, Dorchester County, Md.

TUBBMANS DRAIN.

(Honga River—Charts Nos. 39 and 40.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 20 41. 16	76 12 40. 52	S 8 04 W N 46 46 E N 14 18 W	N 8 04 E S 46 47 W S 14 18 E	823 2,825 2,511	Gunners. Kerwin. Keenes.
2	38 21 04. 94	76 13 32. 18	N 24 44 E S 67 02 W S 37 51 E	S 24 44 W N 67 01 E N 37 51 W	1,797 1,296 2,047	Keenes. Mint. Gunners.
3	38 21 32. 82	76 12 59. 10	S 8 24 E N 85 41 E N 10 23 W	N 8 24 W S 85 42 W S 10 23 E	2,585 2,559 703	Gunners. Kerwin. Keenes.
4	38 21 31. 24	76 12 21. 72	S 13 48 W N 81 01 W N 56 21 W	N 13 48 E S 81 02 E S 56 22 E	2,578 1,579 1,344	Gunners. Kerwin. Keenes.
5	38 20 50. 92	76 12 05. 68	N 35 13 E N 36 17 W S 42 18 W	S 35 13 W S 36 18 E N 42 17 E	1,965 2,610 1,546	Kerwin. Keenes. Gunners.

PEANUT.

(Honga River—Charts Nos. 39 and 40.)

1	38 20 50. 92	76 12 05. 68	N 35 13 E N 36 17 W S 42 18 W	S 35 13 W S 36 18 E N 42 17 E	1,965 2,610 1,546	Kerwin. Keenes. Gunners.
2	38 21 31. 24	76 12 21. 72	S 13 48 W N 81 01 W N 56 21 W	N 13 48 E S 81 02 E S 56 22 E	2,578 1,579 1,344	Gunners. Kerwin. Keenes.
3	38 21 06. 78	76 11 08. 84	S 19 20 W S 56 38 W S 0 11 E	N 19 19 E N 56 37 E N 0 11 W	1,135 3,053 3,543	Kerwin. Gunners. Wroten.

GUM.

(Honga River—Charts Nos. 39 and 40.)

1	38 20 08. 82	76 11 36. 90	N 6 58 E N 81 20 W S 25 29 E	S 6 58 W S 81 21 E N 25 29 W	3,048 1,826 1,757	Kerwin. Gunners. Wroten.
2	38 20 11. 70	76 11 54. 90	S 36 15 E N 16 08 E N 82 21 W	N 36 15 W S 16 08 W S 82 21 E	2,088 3,049 1,339	Wroten. Kerwin. Gunners.
3	38 20 13. 24	76 12 04. 30	S 40 32 E N 20 52 E N 83 18 W	N 40 32 W S 20 53 W S 83 19 E	2,283 3,078 1,085	Wroten. Kerwin. Gunners.
4	38 20 50. 92	76 12 05. 68	N 35 13 E N 36 17 W S 42 18 W	S 35 13 W S 36 18 E N 42 17 E	1,965 2,610 1,546	Kerwin. Keenes. Gunners.
5	38 21 06. 78	76 11 08. 84	S 19 20 W S 56 38 W S 0 11 E	N 19 19 E N 56 37 E N 0 11 W	1,135 3,053 3,543	Kerwin. Gunners. Wroten.
6	38 20 22. 66	76 11 03. 78	N 11 16 W S 85 55 W S 3 27 W	S 11 17 E N 85 54 E N 3 27 E	2,609 2,691 2,057	Wroten. Gunners. Wroten.

WROTEN ISLAND.

(Honga River—Charts Nos. 39 and 40.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 18 12.40	76 12 00.50	N 59 24 W S 54 59 W S 61 38 E	S 59 25 E N 54 59 E N 61 37 W	3,072 785 2,445	Mount Zion M. E. Church Bridge. Bentley. [Spire.]
2	38 19 20.32	76 12 45.56	N 0 33 E S 63 22 W S 11 25 E	S 0 33 W N 63 22 E N 11 25 W	1,912 1,619 2,796	Gunnars. Mount Zion M. E. Church Bridge. [Spire.]
3	38 20 11.70	76 11 54.90	S 36 15 E N 16 08 E N 82 21 W	N 36 15 W S 16 08 W S 82 21 E	2,088 3,049 1,339	Wroten. Kerwin. Gunnars.
4	38 19 55.12	76 11 46.86	N 64 25 W S 14 25 W S 42 14 E	S 64 26 E N 14 24 E N 42 14 W	1,708 4,042 1,519	Gunnars. Bridge. Wroten.
5	38 19 41.22	76 11 59.10	N 45 13 W S 11 11 W S 64 01 E	S 45 14 E N 11 10 E N 64 01 W	1,713 3,513 1,497	Gunnars. Bridge. Wroten.
6	38 18 49.00	76 11 57.06	N 83 04 W S 22 53 W S 41 01 E	S 83 03 E N 22 53 E N 41 01 W	2,732 1,828 3,175	Mount Zion M. E. Church Bridge. Bentley. [Spire.]
7	38 18 42.22	76 11 09.82	N 1 35 E S 53 48 W S 20 23 E	S 1 35 W N 53 47 E N 20 22 W	1,334 2,467 2,312	Wroten. Bridge. Bentley.

SMOKE POINT.

(Honga River—Chart No. 40.)

1	38 17 52.32	76 11 14.54	S 62 30 E N 45 24 E N 83 06 W	N 62 30 W S 45 23 W S 83 06 E	1,049 3,003 1,879	Bentley. Charles. Bridge.
2	38 17 54.62	76 11 43.28	S 71 39 E N 55 00 E N 82 19 W	N 71 39 W S 55 01 W S 82 19 E	1,785 3,542 1,111	Bentley. Charles. Bridge.
3	38 18 01.68	76 11 42.60	S 64 29 E N 58 07 E S 85 26 W	N 64 29 W S 58 08 W N 85 25 E	1,857 3,396 1,120	Bentley. Charles. Bridge.
4	38 17 58.70	76 11 14.22	S 52 49 E N 48 21 E N 89 40 W	N 52 49 W S 48 20 W S 89 41 E	1,157 2,850 1,873	Bentley. Charles. Bridge.

Survey of Oyster Bars, Dorchester County, Md.

DARK POINT.

(Honga River—Chart No. 40.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 17 27.98	76 09 27.16	N 24 22 E N 13 43 E N 80 05 W	S 24 22 W S 13 43 W S 80 06 E	2,546 3,016 1,953	Lakes. Charles. Bentley.
2	38 18 00.32	76 09 57.80	N 56 37 E N 3 05 E S 55 47 W	S 56 38 W S 3 05 W N 55 47 E	2,232 1,843 1,341	Lakes. Charles. Bentley.
3	38 17 56.00	76 10 44.14	N 33 49 E N 87 49 W S 11 23 E	S 33 50 W S 87 50 E N 11 23 W	2,391 2,675 620	Charles. Bridge. Bentley.
4	38 18 51.52	76 10 56.94	N 86 06 E N 16 40 W S 52 48 W	S 86 07 W S 16 40 E N 54 47 E	1,674 1,005 2,929	Charles. Wroten. Bridge.
5	38 18 55.40	76 10 13.14	N 58 49 W S 15 02 W S 88 03 E	S 58 49 E N 15 02 E N 88 03 W	1,717 2,793 507	Wroten. Bentley. Charles.
6	38 18 37.97	76 09 31.54	N 46 22 W S 41 46 W N 88 00 W	S 46 23 E N 41 45 W S 88 00 E	827 2,713 1,167	Charles. Bentley. Lakes.
7	38 17 52.42	76 09 20.68	N 30 25 E N 22 50 W S 76 54 W	S 30 25 W S 22 51 E N 76 53 E	1,733 2,290 2,151	Lakes. Charles. Bentley.

LAKES COVE.

(Honga River—Chart No. 40.)

1	38 16 55.38	76 09 18.12	S 42 12 W S 23 30 E N 64 12 E	N 42 11 E N 23 30 W S 64 12 W	3,592 1,356 518	Hoopersville Methodist Church Cupola. Windmill 2. Asquith.
2	38 17 16.45	76 09 48.20	N 30 43 E N 2 41 W N 62 00 W	S 30 44 W S 2 41 E S 62 01 E	3,150 3,322 1,545	Lakes. Charles. Bentley.
3	38 17 17.87	76 09 31.63	N 23 43 E N 10 20 W N 69 26 W	S 23 44 W S 10 20 E S 69 27 E	2,906 3,325 1,927	Lakes. Charles. Bentley.
4	38 17 27.98	76 09 27.16	N 24 22 E N 13 43 E N 80 05 W	S 24 22 W S 13 43 W S 80 06 E	2,546 3,016 1,953	Lakes. Charles. Bentley.
5	38 17 52.42	76 09 20.68	N 30 25 E N 22 50 W S 76 54 W	S 30 25 W S 22 51 E N 76 53 E	1,733 2,290 2,151	Lakes. Charles. Bentley.
6	38 18 02.14	76 08 33.80	N 17 29 W N 50 10 W S 76 17 W	S 17 29 E S 50 11 E N 76 15 E	1,224 2,777 3,439	Lakes. Charles. Bentley.
7	38 17 37.89	76 08 43.94	N 2 50 W N 35 40 W N 89 58 W	S 2 50 E S 35 41 E S 89 59 E	1,987 3,195 3,072	Lakes. Charles. Bentley.

WINDMILL.

(Honga River—Chart No. 40.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 15 44.58	76 09 38.82	S 38 46 E	N 38 45 W	2,981	Hopkins Memorial Church Cupola.
			N 43 38 E	S 43 39 W	1,581	Windmill 2.
			S 81 38 W	N 81 37 E	1,883	Hoopersville Methodist Church Cupola.
2	38 16 39.32	76 10 06.60	S 27 57 W	N 27 57 E	2,399	Hoopersville Methodist Church Cupola.
			S 69 00 E	N 69 00 W	1,960	Windmill 2.
			N 66 24 E	S 66 25 W	1,916	Asquith.
3	38 16 55.38	76 09 18.12	S 42 12 W	N 42 11 E	3,592	Hoopersville Methodist Church Cupola.
			S 23 30 E	N 23 30 W	1,356	Windmill 2.
			N 64 12 E	S 64 12 W	518	Asquith.
4	38 16 00.58	76 08 57.98	N 0 30 E	S 0 30 W	605	Windmill 2.
			S 74 35 W	N 74 33 E	3,059	Hoopersville Methodist Church Cupola.
			S 15 15 E	N 15 15 W	2,969	Hopkins Memorial Church Cupola.

HICKORY.

(Honga River—Chart No. 40.)

1	38 15 44.58	76 09 38.82	S 38 46 E	N 38 45 W	2,981	Hopkins Memorial Church Cupola.
			N 43 38 E	S 43 39 W	1,581	Windmill 2.
			S 81 38 W	N 81 37 E	1,883	Hoopersville Methodist Church Cupola.
2	38 15 52.42	76 10 00.76	N 62 17 E	S 62 17 W	1,891	Windmill 2.
			N 34 16 E	S 34 17 W	2,842	Asquith.
			S 67 12 W	N 67 11 E	1,389	Hoopersville Methodist Church Cupola.
3	38 16 17.94	76 10 15.30	S 32 34 W	N 32 34 E	1,660	Hoopersville Methodist Church Cupola.
			N 89 32 E	S 89 32 W	2,060	Windmill 2.
			N 53 11 E	S 53 11 W	2,482	Asquith.
4	38 16 39.32	76 10 06.60	S 27 57 W	N 27 57 E	2,399	Hoopersville Methodist Church Cupola.
			S 69 00 E	N 69 00 W	1,960	Windmill 2.
			N 66 24 E	S 66 25 W	1,916	Asquith.

Survey of Oyster Bars, Dorchester County, Md.

LOWER THOROUGHFARE.

(Honga River—Chart No. 40.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 15 16.32	76 09 20.92	N 44 37 E N 16 21 E N 73 49 W	S 44 38 W S 16 21 W S 73 50 E	4,289 2,185 2,435	Paul. Windmill 2. Hoopersville Methodist Church Cupola.
2	38 15 22.58	76 09 55.40	N 88 43 E N 39 05 E N 71 47 W	S 88 45 W S 39 06 W S 71 48 E	5,950 2,430 1,497	Norman. Windmill 2. Hoopersville Methodist Church Cupola.
3	38 15 28.00	76 09 54.92	S 89 31 E N 41 44 E N 78 45 W	N 89 29 W S 41 44 W S 78 46 E	5,936 2,282 1,463	Norman. Windmill 2. Hoopersville Methodist Church Cupola.
4	38 15 39.62	76 08 48.36	N 43 26 E N 10 49 W S 88 06 W	S 43 27 W S 10 49 E N 88 08 E	3,123 1,335 3,206	Paul. Windmill 2. Hoopersville Methodist Church Cupola.
5	38 15 27.02	76 08 45.10	N 37 26 E N 10 59 W N 84 29 W	S 37 26 W S 10 59 E S 84 31 E	3,390 1,768 3,307	Paul. Windmill 2. Hoopersville Methodist Church Cupola.

PAUL.

(Honga River—Chart No. 40.)

1	38 16 03.42	76 08 15.64	S 69 20 E N 41 05 E N 65 34 W	N 69 19 W S 41 05 W S 65 35 E	3,522 1,944 1,230	Norman. Paul. Windmill 2.
2	38 16 19.26	76 08 28.20	S 63 55 E N 59 58 E S 88 09 W	N 63 53 W S 59 59 W N 88 09 E	4,042 1,861 786	Norman. Paul. Windmill 2.
3	38 16 24.80	76 08 17.22	S 59 32 E N 60 34 E S 78 52 W	N 59 31 W S 60 34 W N 78 52 E	3,874 1,515 1,099	Norman. Paul. Windmill 2.
4	38 16 09.16	76 08 04.74	S 64 28 E S 37 50 E N 77 24 W	N 64 27 W N 37 50 W S 77 24 E	3,332 1,611 1,445	Norman. Paul. Windmill 2.

CRAB POINT.

(Honga River—Chart No. 40.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "		
1	38 15 53.08	76 07 23.38	S 64 52 E	N 64 52 W	Yards. 2, 106	Norman.
			N 3 31 W	S 3 31 E	1, 818	Paul.
			N 71 08 W	S 71 09 E	2, 652	Windmill 2.
2	38 15 56.60	76 07 48.80	S 68 35 E	N 68 34 W	2, 774	Norman.
			N 18 24 E	S 18 24 W	1, 787	Paul.
			N 68 04 W	S 68 05 E	1, 977	Windmill 2.
3	38 16 04.08	76 07 47.56	S 63 37 E	N 63 36 W	2, 847	Norman.
			N 20 12 E	S 20 12 W	1, 538	Paul.
			N 75 24 W	S 75 23 E	1, 929	Windmill 2.
4	38 16 00.44	76 07 21.48	S 58 23 E	N 58 23 W	2, 180	Norman.
			N 5 55 W	S 5 55 E	1, 575	Paul.
			N 76 37 W	S 76 38 E	2, 631	Windmill 2.

NORMAN.

(Honga River—Chart No. 40.)

1	38 14 13.98	76 06 03.62	S 62 08 E	N 62 07 W	2, 723	Hooper Strait Light.
			N 5 00 W	S 5 00 E	2, 457	Norman.
			S 80 50 W	N 80 49 E	3, 765	Applegarth.
2	38 14 32.20	76 07 06.08	N 38 17 E	S 38 17 W	2, 335	Norman.
			N 86 59 W	S 87 00 E	2, 198	Hopkins Memorial Church Cupola.
			S 59 27 W	N 59 27 E	2, 387	Applegarth.
3	38 15 33.24	76 08 33.96	S 86 35 E	N 86 34 W	3, 790	Norman.
			N 35 24 E	S 35 25 W	3, 046	Paul.
			N 22 32 W	S 22 32 E	1, 652	Windmill 2.
4	38 15 38.98	76 06 45.80	S 65 15 E	N 65 14 W	1, 000	Norman.
			N 25 53 W	S 25 53 E	2, 545	Paul.
			N 69 12 W	S 69 14 E	3, 753	Windmill 2.

APPLEGARTH.

(Hooper Strait—Chart No. 40.)

1	38 12 51.50	76 05 47.84	S 10 27 E	N 10 27 W	3, 121	Okahanikan.
			N 52 49 E	S 52 50 W	2, 496	Hooper Strait Light.
			N 6 55 W	S 6 55 E	5, 267	Norman.
2	38 13 49.00	76 06 46.30	S 83 04 E	N 83 03 W	3, 570	Hooper Strait Light.
			N 15 38 E	S 15 38 W	3, 416	Norman.
			N 84 37 W	S 84 38 E	2, 593	Applegarth.
3	38 14 13.98	76 06 03.62	S 62 08 E	N 62 07 W	2, 723	Hooper Strait Light.
			N 5 00 W	S 5 00 E	2, 457	Norman.
			S 80 50 W	N 80 49 E	3, 765	Applegarth.
4	38 13 13.88	76 05 05.12	N 74 52 W	S 74 54 E	5, 463	Applegarth.
			N 48 29 E	S 48 29 W	1, 137	Hooper Strait Light.
			S 8 30 W	N 8 29 E	3, 866	Okahanikan.

Survey of Oyster Bars, Dorchester County, Md.

HOOPER STRAIT.

(Hooper Strait—Chart No. 40.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 12 30.24	76 07 05.96	S 48 21 E N 61 18 E N 35 23 W	N 48 20 W S 61 19 W S 35 24 E	3,540 4,636 3,555	Okahanikan. Hooper Strait Light. Applegarth.
2	38 12 48.96	76 07 29.02	S 47 31 E N 71 12 E N 32 31 W	N 47 30 W S 71 14 W S 32 31 E	4,418 4,943 2,689	Okahanikan. Hooper Strait Light. Applegarth.
3	38 13 11.04	76 06 56.76	S 32 47 E N 77 28 E N 56 32 W	N 32 46 W S 77 30 W S 56 33 E	4,433 3,914 2,761	Okahanikan. Hooper Strait Light. Applegarth.
4	38 12 54.18	76 06 02.80	S 16 58 E N 59 13 E N 60 47 W	N 16 58 W S 59 14 W S 60 48 E	3,304 2,771 4,284	Okahanikan. Hooper Strait Light. Applegarth.

RICHLAND.

(Hooper Strait—Chart No. 40.)

1	38 12 37.64	76 08 23.88	S 61 07 E N 0 18 E N 62 13 W	N 61 05 W S 0 18 W S 62 17 E	5,389 2,650 11,910	Okahanikan. Applegarth. Hooper Island Light.
2	38 12 50.28	76 08 24.76	S 57 26 E N 0 57 E N 64 00 W	N 57 24 W S 0 57 W S 64 04 E	5,627 2,224 11,697	Okahanikan. Applegarth. Hooper Island Light.
3	38 12 50.40	76 08 12.76	S 55 34 E N 7 15 W N 64 41 W	N 55 32 W S 7 15 E S 64 46 E	5,363 2,238 11,983	Okahanikan. Applegarth. Hooper Island Light.
4	38 12 37.72	76 08 12.58	S 59 28 E N 6 11 W N 62 53 W	N 59 27 W S 6 11 E S 62 57 E	5,129 2,663 12,176	Okahanikan. Applegarth. Hooper Island Light.

Survey of Oyster Bars, Dorchester County, Md.

149

BLOODSWORTH.

(Hooper Strait—Charts Nos. 40 and 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 12 12.66	76 02 41.75	S 88 13 E N 28 04 E N 46 26 W	N 88 11 W S 28 04 W S 46 27 E	5,551 2,570 4,088	Sharkfin Shoal Light. Head. Hooper Strait Light.
2	38 12 24.55	76 02 57.30	S 84 30 E N 41 00 E N 46 31 W	N 84 28 W S 41 00 W S 46 32 E	5,990 2,474 3,513	Sharkfin Shoal Light. Head. Hooper Strait Light.
3	38 12 20.54	76 03 02.14	S 85 53 E N 41 11 E N 43 28 W	N 85 51 W S 41 12 W S 43 29 E	6,107 2,660 3,517	Sharkfin Shoal Light. Head. Hooper Strait Light.
4	38 12 34.28	76 03 38.26	S 82 43 E N 60 26 E N 34 55 W	N 82 40 W S 60 27 W S 34 56 E	7,108 3,118 2,548	Sharkfin Shoal Light. Head. Hooper Strait Light.
5	38 12 54.98	76 03 37.04	S 77 10 E N 72 35 E N 46 59 W	N 77 07 W S 72 37 W S 47 00 E	7,199 2,808 2,040	Sharkfin Shoal Light. Head. Hooper Strait Light.
6	38 12 42.22	76 02 47.02	S 78 23 E N 46 42 E N 57 10 W	N 78 21 W S 46 43 W S 57 11 E	5,807 1,854 3,358	Sharkfin Shoal Light. Head. Hooper Strait Light.
7	38 12 18.85	76 02 34.19	S 85 56 E N 26 05 E N 50 29 W	N 85 54 W S 26 05 W S 50 30 E	5,360 2,292 4,100	Sharkfin Shoal Light. Head. Hooper Strait Light.

HOPKINS COVE.

(Hooper Strait—Chart No. 41.)

1	38 12 53.07	76 02 33.80	S 73 57 E N 47 46 E N 65 22 W	N 73 55 W S 47 47 W S 65 23 E	5,553 1,347 3,492	Sharkfin Shoal Light. Head. Hooper Strait Light.
2	38 13 03.37	76 03 17.05	S 73 49 E N 75 27 E N 61 17 W	N 73 47 W S 75 28 W S 61 17 E	6,755 2,219 2,307	Sharkfin Shoal Light. Head. Hooper Strait Light.
3	38 13 13.92	76 03 13.52	S 70 42 E N 84 23 E N 70 25 W	N 70 40 W S 84 24 W S 70 26 E	6,774 2,064 2,247	Sharkfin Shoal Light. Head. Hooper Strait Light.
4	38 13 04.22	76 02 32.48	S 70 11 E N 61 11 E N 71 24 W	N 70 09 W S 61 12 W S 71 25 E	5,635 1,098 3,387	Sharkfin Shoal Light. Head. Hooper Strait Light.
5	38 12 58.42	76 02 26.23	S 71 32 E N 47 41 E N 69 18 W	N 71 30 W S 47 41 W S 69 19 E	5,413 1,076 3,608	Sharkfin Shoal Light. Head. Hooper Strait Light.

Survey of Oyster Bars, Dorchester County, Md.

RED SECTOR.

(Hooper Strait—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 12 23.72	76 02 11.56	S 83 27 E N 12 05 E N 57 00 W	N 83 26 W S 12 06 W S 57 02 E	4,776 1,938 4,489	Sharkfin Shoal Light. Head. Hooper Strait Light.
2	38 12 39.64	76 02 27.89	S 78 12 E N 31 45 E N 60 12 W	N 78 10 W S 31 45 W S 60 13 E	5,291 1,597 3,839	Sharkfin Shoal Light. Head. Hooper Strait Light.
3	38 12 48.03	76 02 15.00	S 74 15 E N 24 50 E N 66 08 W	N 74 13 W S 24 50 W S 66 10 E	5,025 1,184 4,017	Sharkfin Shoal Light. Head. Hooper Strait Light.
4	38 12 36.16	76 02 02.08	S 77 54 E N 5 57 E N 63 15 W	N 77 52 W S 5 57 W S 63 17 E	4,595 1,484 4,498	Sharkfin Shoal Light. Head. Hooper Strait Light.

BELL BUOY.

(Hooper Strait—Charts Nos. 41 and 42.)

1	38 11 25.80	76 01 22.21	N 67 41 E N 13 16 W N 49 07 W	S 67 42 W S 13 16 E S 49 09 E	3,709 3,953 6,717	Sharkfin Shoal Light. Head. Hooper Strait Light.
2	38 11 40.82	76 02 00.26	N 78 31 E N 1 48 E N 46 15 W	S 78 33 W S 1 48 W S 46 14 E	4,535 3,343 5,627	Sharkfin Shoal Light. Head. Hooper Strait Light.
3	38 12 22.84	76 01 56.04	S 83 14 W N 0 12 W N 59 22 W	N 83 12 E S 0 12 E S 59 23 E	4,362 1,925 4,856	Sharkfin Shoal Light. Head. Hooper Strait Light.
4	38 12 24.96	76 01 41.42	S 81 33 E N 12 03 W N 62 15 W	N 81 32 W S 12 04 E S 62 17 E	3,986 1,895 5,160	Sharkfin Shoal Light. Head. Hooper Strait Light.
5	38 12 57.84	76 01 40.72	S 66 39 E N 72 00 E N 29 06 W	N 66 37 W S 72 03 W S 29 06 E	4,275 7,082 852	Sharkfin Shoal Light. Frog. Head.
6	38 13 04.38	76 01 19.76	S 60 22 E N 72 18 E N 61 40 W	N 60 21 W S 72 20 W S 61 41 E	3,874 7,384 1,105	Sharkfin Shoal Light. Frog. Head.
7	38 12 31.84	76 00 11.98	S 62 24 E N 57 25 E N 59 43 W	N 62 24 W S 57 27 W S 59 44 E	1,763 6,209 3,214	Sharkfin Shoal Light. Frog. Head.
8	38 11 58.90	76 01 19.76	N 85 02 E N 19 35 W N 57 18 W	S 85 03 W S 19 36 E S 57 30 E	3,379 2,899 6,100	Sharkfin Shoal Light. Head. Hooper Strait Light.

JANE.

(Upper Tangier Sound—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 11 25.80	76 00 45.38	S 88 22 E N 60 06 E N 26 07 W	N 88 19 W S 60 07 W S 26 08 E	6,861 2,828 4,286	Room. Sharkfin Shoal Light. Head.
2	38 11 42.26	76 00 45.56	S 83 45 E N 70 49 E N 29 45 W	N 83 43 W S 70 50 W S 29 46 E	6,903 2,601 3,793	Room. Sharkfin Shoal Light. Head.
3	38 11 35.12	76 00 19.80	S 85 17 E N 58 16 E N 36 00 W	N 85 13 W S 58 17 W S 36 01 E	6,197 2,082 4,368	Room. Sharkfin Shoal Light. Head.
4	38 11 25.83	76 00 19.40	S 88 11 E N 51 20 E N 33 50 W	N 88 07 W S 51 21 W S 33 51 E	6,170 2,255 4,630	Room. Sharkfin Shoal Light. Head.

MUD (DORCHESTER COUNTY).

(Upper Tangier Sound—Chart No. 41.)

1	38 09 26.74	76 00 23.48	S 10 55 W S 87 10 E N 32 41 W	N 10 55 E N 87 07 W S 32 41 E	2,838 5,546 2,607	Senator. Deal Island Church. Crab.
2	38 10 15.54	75 59 41.40	N 11 13 E N 77 45 W S 20 31 W	S 11 13 W S 77 46 E N 20 30 E	3,853 2,587 4,732	Sharkfin Shoal Light. Crab. Senator.
3	38 10 22.44	75 59 20.74	N 3 13 E N 84 08 W S 25 20 W	S 3 13 W S 84 09 E N 25 19 E	3,552 3,094 5,162	Sharkfin Shoal Light. Crab. Senator.
4	38 09 53.08	75 59 18.00	N 67 28 W S 31 50 W S 72 57 E	S 67 29 E N 31 49 E N 72 58 W	3,411 4,325 3,970	Crab. Senator. Deal Island Church.

Thence along county boundary as delineated on Chart No. 41 to corner No. 1.

Survey of Oyster Bars, Dorchester County, Md.

SHARKFIN SHOAL.

(Upper Tangier Sound—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 11 34.68	75 58 49.07	N 29 51 E N 30 05 W N 54 32 W	S 29 53 W S 30 05 E S 54 34 E	6,079 1,283 6,114	Frog. Sharkfin Shoal Light. Head.
2	38 12 51.20	76 00 03.11	S 42 05 E N 61 41 E N 72 11 W	N 42 04 W S 61 43 W S 72 12 E	1,081 5,675 3,163	Sharkfin Shoal Light. Frog. Head.
3	38 13 04.38	76 01 19.76	S 60 22 E N 72 18 E N 61 40 W	N 60 21 W S 72 20 W S 61 41 E	3,874 7,384 1,105	Sharkfin Shoal Light. Frog. Head.
4	38 13 14.35	76 00 47.66	N 84 08 W S 48 09 E N 72 50 E	S 84 09 E N 48 08 W S 72 51 W	1,835 3,374 6,470	Head. Sharkfin Shoal Light. Frog.
5	38 13 26.27	76 00 09.33	S 85 41 W S 29 22 E N 73 42 E	N 85 40 E N 29 22 W S 73 44 W	2,853 3,043 5,377	Head. Sharkfin Shoal Light. Frog.
6	38 13 30.68	75 59 55.08	S 83 34 W S 21 41 E N 74 07 E	N 83 33 E N 21 40 W S 74 10 W	3,245 3,014 4,972	Head. Sharkfin Shoal Light. Frog.
7	38 12 21.93	75 58 43.47	S 58 38 W S 60 00 E N 38 02 E	N 58 38 E N 59 58 W S 38 03 W	927 4,173 4,671	Sharkfin Shoal Light. Room. Frog.

WARE SANDS.

(Fishing Bay—Chart No. 41.)

1	38 12 57.84	76 01 40.72	S 66 39 E N 72 00 E N 29 06 W	N 66 37 W S 72 03 W S 29 06 E	4,275 7,982 852	Sharkfin Shoal Light. Frog. Head.
2	38 13 23.40	76 01 40.22	N 17 12 W S 74 40 W S 56 50 E	S 17 12 E N 74 39 E N 56 48 W	3,799 444 4,672	Croch. Head. Sharkfin Shoal Light.
3	38 14 00.09	76 01 56.44	S 0 09 E S 48 52 E N 16 08 W	N 0 09 W N 48 50 W S 16 08 E	1,355 5,767 2,490	Head. Sharkfin Shoal Light. Croch.
4	38 14 03.76	76 01 49.12	S 7 22 W S 46 38 E N 21 21 W	N 7 22 E N 46 37 W S 21 21 E	1,491 5,705 2,435	Head. Sharkfin Shoal Light. Croch.
5	38 13 14.35	76 00 47.66	N 84 08 W S 48 09 E N 72 50 E	S 84 09 E N 48 08 W S 72 51 W	1,835 3,374 6,470	Head. Sharkfin Shoal Light. Frog.
6	38 13 04.38	76 01 19.76	S 60 22 E N 72 18 E N 61 40 W	N 60 21 W S 72 20 W S 61 41 E	3,874 7,384 1,105	Sharkfin Shoal Light. Frog. Head.

SAND SHOAL.

(Fishing Bay—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 13 26.27	76 00 09.33	S 85 41 W S 29 22 E N 73 42 E	N 85 40 E N 29 22 W S 73 44 W	2,853 3,043 5,377	Head. Sharkfin Shoal Light. Frog.
2	38 14 47.44	76 01 32.07	N 59 25 W S 12 19 W S 34 26 E	S 59 25 E N 12 19 E N 34 25 W	1,556 3,021 6,534	Croch. Head. Sharkfin Shoal Light.
3	38 14 31.10	75 59 47.39	N 71 56 W S 55 00 W S 10 38 E	S 71 57 E N 55 01 E N 10 38 W	4,337 4,186 4,922	Croch. Head. Sharkfin Shoal Light.
4	38 13 30.68	75 59 55.08	S 83 34 W S 21 41 E N 74 07 E	N 83 33 E N 21 40 W S 74 10 W	3,245 3,014 4,972	Head. Sharkfin Shoal Light. Frog.

CLAY ISLAND.

(Fishing Bay—Chart No. 41.)

1	38 13 38.82	75 59 28.94	S 80 45 W S 7 44 E N 75 07 E	N 80 44 E N 7 44 W S 75 09 W	3,972 3,104 4,229	Head. Sharkfin Shoal Light. Frog.
2	38 14 21.04	75 59 32.36	S 61 42 W S 6 27 E S 85 23 E	N 61 41 E N 6 27 W N 85 21 W	4,348 4,528 4,192	Head. Sharkfin Shoal Light. Frog.
3	38 14 30.64	75 58 19.12	S 67 33 W S 16 38 W S 73 30 E	N 67 31 E N 16 37 E N 73 29 W	6,250 5,033 2,326	Head. Sharkfin Shoal Light. Frog.
4	38 13 50.82	75 58 50.54	S 78 05 W S 9 51 W N 77 27 E	N 78 03 E N 9 51 E S 77 26 W	5,050 3,532 3,141	Head. Sharkfin Shoal Light. Frog.

Survey of Oyster Bars, Dorchester County, Md.

EVANS.

(Fishing Bay—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 14 31.10	75 59 47.39	N 71 56 W S 55 00 W S 10 38 E	S 71 57 E N 55 01 E N 10 38 W	4,337 4,186 4,922	Croch. Head. Sharkfin Shoal Light.
2	38 14 47.44	76 01 32.07	N 59 25 W S 12 19 W S 34 26 E	S 59 25 E N 12 19 E N 34 25 W	1,556 3,021 6,534	Croch. Head. Sharkfin Shoal Light.
3	38 15 24.82	76 01 17.20	N 73 49 E N 9 56 W S 75 00 W	S 73 50 W S 9 56 E N 74 59 E	3,702 2,987 1,797	Fish. Roast. Croch.
4	38 15 43.82	76 00 57.10	N 82 37 E N 24 31 W S 64 02 W	S 82 36 W S 24 31 E N 64 01 E	3,046 2,528 2,525	Fish. Roast. Croch.
5	38 15 10.00	75 59 43.39	N 34 41 E N 3 39 W N 89 32 W	S 34 42 W S 3 39 E S 89 34 E	1,863 4,623 4,230	Fish. Ear. Croch.
6	38 14 44.60	75 59 23.83	S 54 51 W S 3 03 E S 74 01 E	N 54 49 E N 3 03 W N 74 00 W	4,961 5,301 4,110	Head. Sharkfin Shoal Light. Frog.

GOOSE CREEK.

(Fishing Bay—Chart No. 41.)

1	38 15 24.82	76 01 17.20	N 73 49 E N 9 56 W S 75 00 W	S 73 50 W S 9 56 E N 74 59 E	3,702 2,987 1,797	Fish. Roast. Croch.
2	38 15 52.25	76 01 56.97	S 26 00 W N 88 41 E N 15 03 E	N 26 00 E S 88 43 W S 15 03 W	1,546 4,613 2,089	Croch. Fish. Roast.
3	38 16 37.70	76 01 46.32	S 71 46 E N 60 53 E N 28 09 E	N 71 44 W S 60 54 W S 28 09 W	4,558 3,402 549	Fish. Ear. Roast.
4	38 16 39.67	76 00 32.78	S 57 51 E N 32 38 E N 11 43 W	N 57 50 W S 32 39 W S 11 43 E	2,803 1,888 3,905	Fish. Ear. Elliott.
5	38 15 43.82	76 00 57.10	N 82 37 E N 24 31 W S 64 02 W	S 82 38 W S 24 31 E N 64 01 E	3,046 2,528 2,525	Fish. Roast. Croch.

DUCK ISLAND.

(Fishing Bay—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "		
1	38 15 44.16	75 59 59.19	N 2 05 E	S 2 05 W	Yards.	
			N 48 31 W	S 48 32 E	3,463	Ear.
			S 73 39 W	N 73 38 E	3,456	Roast.
2	38 15 58.34	76 00 14.96	N 10 21 E	S 10 21 W	3,970	Croch.
			N 59 08 W	S 50 09 E	3,033	Ear.
			S 64 48 W	N 64 47 E	2,826	Roast.
3	38 16 33.56	76 00 17.72	S 56 55 E	N 56 54 W	3,747	Croch.
			N 18 59 E	S 18 59 W	2,356	Fish.
			N 16 29 W	S 16 30 E	1,900	Ear.
4	38 16 42.24	76 00 00.44	N 23 51 W	S 23 51 E	4,203	Elliott.
			N 82 37 W	S 82 38 E	4,086	Elliott.
			S 50 50 W	N 50 48 E	2,577	Roast.
5	38 16 09.32	75 59 33.72	N 11 55 W	S 11 55 E	4,870	Croch.
			N 66 12 W	S 66 13 E	2,671	Ear.
			S 66 21 W	N 66 19 E	3,570	Roast.
					4,898	Croch.

BUNGAY.

(Fishing Bay—Chart No. 41.)

1	38 16 33.56	76 00 17.72	S 56 55 E	N 56 54 W	2,356	Fish.
			N 18 59 E	S 18 59 W	1,900	Ear.
			N 16 29 W	S 16 30 E	4,203	Elliott.
2	38 17 18.81	76 01 03.08	S 48 31 E	N 48 29 W	4,244	Fish.
			N 81 35 E	S 81 36 W	1,844	Ear.
			N 0 17 E	S 0 17 W	2,503	Elliott.
3	38 17 48.46	76 01 12.58	S 70 37 E	N 70 37 W	2,200	Ear.
			N 9 59 E	S 9 59 W	1,528	Elliott.
			N 50 09 W	S 50 10 E	3,259	Farm.
4	38 17 53.27	76 00 58.09	S 62 11 E	N 62 11 W	1,912	Ear.
			N 5 07 W	S 5 07 E	1,347	Elliott.
			N 56 18 W	S 56 19 E	3,471	Farm.
5	38 16 42.24	76 00 00.44	N 23 51 W	S 23 51 E	4,086	Elliott.
			N 82 37 W	S 82 38 E	2,577	Roast.
			S 50 50 W	N 50 48 E	4,870	Croch.

Survey of Oyster Bars, Dorchester County, Md.

OLD HOUSE.

(Fishing Bay—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 17 24.57	76 01 45.83	N 88 32 E N 26 26 E N 29 13 W	S 88 33 W S 26 26 W S 29 14 E	2,960 2,580 3,316	Ear. Elliott. Farm.
2	38 17 30.80	76 01 56.02	S 87 37 E N 34 03 E N 26 40 W	N 87 35 W S 34 03 W S 26 41 E	3,234 2,535 3,004	Ear. Elliott. Farm.
3	38 18 27.98	76 01 48.36	S 5 32 E N 81 57 E N 20 06 E	N 5 32 W S 81 57 W S 20 07 W	3,249 1,228 3,081	Roast. Elliott. Thoro.
4	38 18 26.80	76 01 35.94	S 0 18 W N 76 33 E N 13 58 E	N 0 18 E S 76 33 W S 13 58 W	3,195 911 3,018	Roast. Elliott. Thoro.

POINT.

(Fishing Bay—Chart No. 41.)

1	38 18 33.79	76 01 19.90	S 7 22 W S 87 01 E N 6 24 E	N 7 21 E N 87 01 W S 6 25 W	3,459 460 2,713	Roast. Elliott. Thoro.
2	38 18 36.44	76 01 24.92	S 5 02 W S 79 11 E N 9 30 E	N 5 02 E N 79 11 W S 9 30 W	3,533 604 2,643	Roast. Elliott. Thoro.
3	38 18 44.20	76 01 18.54	S 7 13 W S 84 49 E N 6 29 E	N 7 13 E N 84 48 W S 6 29 W	3,811 1,003 2,361	Roast. High. Thoro.
4	38 18 41.50	76 01 13.66	S 9 22 W N 89 59 E N 3 13 E	N 9 22 E S 89 58 W S 3 13 W	3,740 669 2,441	Roast. High. Thoro.

HILL.

(Fishing Bay—Chart No. 41.)

1	38 18 41.16	76 01 36.80	S 0 06 E S 73 18 E N 17 04 E	N 0 06 W N 73 18 W S 17 04 W	3,677 950 2,561	Roast. Elliott. Thoro.
2	38 18 49.24	76 01 47.96	S 4 23 E S 65 40 E N 25 43 E	N 4 23 W N 65 40 W S 25 44 W	3,963 1,322 2,415	Roast. Elliott. Thoro.
3	38 19 11.08	76 01 16.30	N 8 12 E S 73 49 W S 6 33 W	S 8 12 W N 73 48 E N 6 33 E	1,454 2,502 4,719	Thoro. Farm. Roast.
4	38 19 05.24	76 01 09.84	N 1 15 E S 79 00 W S 8 50 W	S 1 15 W N 78 50 E N 8 50 E	1,636 2,624 4,547	Thoro. Farm. Roast.

THOROUGH.

(Fishing Bay—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "		
1	38 18 51.58	76 02 09.22	S 12 09 E S 70 34 E N 37 34 E	N 12 09 W N 70 34 W S 37 35 W	4, 123 1, 877 2, 645	Roast. Elliott. Thoro.
2	38 19 08.52	76 02 28.22	S 16 37 E S 62 17 E N 54 10 E	N 16 36 W N 62 16 W S 54 11 W	4, 802 2, 570 2, 006	Roast. Elliott. Thoro.
3	38 19 24.34	76 01 51.32	S 4 22 E S 36 49 E N 48 54 E	N 4 22 W N 36 49 W S 48 55 W	5, 150 2, 159 1, 506	Roast. Elliott. Thoro.
4	38 19 10.48	76 01 41.70	S 1 40 E S 39 28 E S 31 09 E	N 1 40 W N 39 28 W S 31 09 W	4, 670 1, 634 1, 795	Roast. Elliott. Thoro.

HALF WAY MARK.

(Fishing Bay—Chart No. 41.)

1	38 19 05.24	76 01 09.84	N 1 15 E S 79 00 W S 8 59 W	S 1 15 W N 78 59 E N 8 59 E	1, 636 2, 624 4, 547	Thoro. Farm. Roast.
2	38 19 11.08	76 01 16.30	N 8 12 E S 73 49 W S 6 33 W	S 8 12 W N 73 48 E N 6 33 E	1, 454 2, 502 4, 719	Thoro. Farm. Roast.
3	38 19 23.76	76 00 57.74	N 15 47 W S 68 46 W S 17 24 E	S 15 47 E N 68 45 E N 17 24 W	1, 051 3, 108 1, 493	Thoro. Farm. High.
4	38 19 17.46	76 00 18.58	N 47 17 W S 76 57 W S 38 01 W	S 47 18 E N 76 55 E N 38 01 E	1, 804 4, 041 1, 900	Thoro. Farm. Elliott.
5	38 19 05.54	76 01 00.18	N 7 44 W S 79 46 W S 3 23 W	S 7 44 E N 79 45 E N 3 23 E	1, 641 2, 877 1, 097	Thoro. Farm. Elliott.

FLAT ROCK.

(Fishing Bay—Chart No. 41.)

1	38 19 17.46	76 00 18.58	N 47 17 W S 76 57 W S 38 01 W	S 47 18 E N 76 55 E N 38 01 E	1, 804 4, 041 1, 900	Thoro. Farm. Elliott.
2	38 19 23.76	76 00 57.74	N 15 47 W S 68 46 W S 17 24 E	S 15 47 E N 68 45 E N 17 24 W	1, 051 3, 108 1, 493	Thoro. Farm. High.
3	38 19 57.00	76 00 09.42	S 86 01 W S 61 45 W S 18 13 W	N 86 00 E N 61 43 E N 18 12 E	1, 573 4, 746 2, 679	Thoro. Farm. High.
4	38 19 52.57	76 00 00.66	N 88 44 W S 64 35 W S 24 05 W	S 88 45 E N 64 33 E N 24 05 E	1, 802 4, 886 2, 622	Thoro. Farm. High.

Survey of Oyster Bars, Dorchester County, Md.

FROG POINT.

(Upper Tangier Sound—Chart No. 41.)

Corner of bar	Latitude ° / ' "	Longitude ° / ' "	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
1	38 13 29.62	75 57 27.69	S 45 27 W S 20 05 E N 31 41 E	N 45 25 E N 20 04 W S 31 41 W	3,941 4,651 1,641	Sharkfin Shoal Light. Room. Frog.
2	38 13 39.90	75 57 30.22	S 41 22 W S 19 26 E N 41 30 E	N 41 21 E N 19 26 W S 41 30 W	4,147 5,000 1,403	Sharkfin Shoal Light. Room. Frog.
3	38 13 46.05	75 56 49.90	N 9 37 W S 48 58 W S 6 51 E	S 9 37 E N 48 56 E N 6 50 W	855 5,057 4,957	Frog. Sharkfin Shoal Light. Room.
4	38 13 37.18	75 56 47.81	N 9 51 W S 52 01 W S 6 36 E	S 9 51 E N 52 00 E N 6 36 W	1,159 4,909 4,653	Frog. Sharkfin Shoal Light. Room.

NEW.

(Nanticoke River—Chart No. 41.)

1	38 15 07.92	75 56 01.04	N 41 30 E N 20 39 W S 36 57 W	S 41 30 W S 29 39 E N 36 56 E	2,020 2,093 2,399	Roar. Cow. Frog.
2	38 15 13.00	75 55 57.48	N 42 50 E N 34 26 W S 36 21 W	S 42 50 W S 34 27 E N 36 21 E	1,829 1,998 2,593	Roar. Cow. Frog.
3	38 15 09.30	75 55 53.30	N 37 41 E N 35 00 W S 40 00 W	S 37 41 W S 35 02 E N 40 00 E	1,852 2,164 2,563	Roar. Cow. Frog.

HILLS AND HOLES.

(Nanticoke River—Chart No. 41.)

1	38 15 23.48	75 55 55.68	N 50 26 E N 42 26 W S 32 59 W	S 50 26 W S 42 27 E N 32 58 E	1,552 1,754 2,911	Roar. Cow. Frog.
2	38 15 36.38	75 55 56.96	N 65 47 E N 53 05 W S 28 20 W	S 65 47 W S 53 06 E N 28 19 E	1,348 1,430 3,269	Roar. Cow. Frog.
3	38 15 34.76	75 55 49.04	N 59 11 E N 55 59 W S 31 58 W	S 59 12 W S 56 00 E N 31 58 E	1,187 1,634 3,327	Roar. Cow. Frog.

ROARING POINT WEST.

(Nanticoke River—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 15 46.36	75 55 49.20	N 78 01 E N 30 35 E N 68 50 W	S 78 02 W S 30 34 W S 68 50 E	1,047 4,228 1,448	Roar. Rag. Cow.
2	38 16 07.10	75 55 50.68	S 82 20 W S 65 35 E N 36 41 E	N 82 20 E N 65 35 W S 36 42 W	1,323 1,107 3,667	Cow. Roar. Rag.
3	38 16 07.78	75 55 43.22	S 82 29 W S 59 42 E N 86 14 E	N 82 28 E N 59 42 W S 86 15 W	1,522 1,002 2,083	Cow. Roar. Nanticoke Church.

Thence along county boundary as delineated on Chart No. 41 to corner No. 1.

BEAN SHOAL.

(Nanticoke River—Chart No. 41.)

1	38 17 32.06	75 55 52.90	S 40 49 E N 88 05 E N 22 07 W	N 40 48 W S 88 05 W S 22 07 E	3,574 2,251 1,424	Nanticoke Church. Rag. Okay.
2	38 17 38.48	75 56 00.78	S 41 03 E S 86 42 E N 16 30 W	N 41 03 W N 86 41 W S 16 30 E	3,876 2,403 1,149	Nanticoke Church. Rag. Okay.
3	38 17 44.04	75 55 52.22	S 36 42 E S 81 38 E N 31 12 W	N 36 41 W N 81 37 W S 31 12 E	3,878 2,255 1,070	Nanticoke Church. Rag. Okay.

OUTER HOLE.

(Nanticoke River—Chart No. 41.)

1	38 17 33.54	75 55 22.32	S 28 56 E N 61 53 E N 46 44 W	N 28 56 W S 61 54 W S 46 45 E	3,148 3,612 1,851	Nanticoke Church. Bivalve Church. Okay.
2	38 17 49.98	75 55 33.62	S 28 51 E N 71 46 E N 55 43 W	N 28 50 W S 71 47 W S 55 43 E	3,778 3,670 1,269	Nanticoke Church. Bivalve Church. Okay.
3	38 17 55.16	75 55 18.02	N 69 44 W S 2 42 E S 61 59 E	S 69 44 E N 2 42 W N 61 58 W	1,559 4,131 1,498	Okay. Roar. Rag.

Thence along county boundary as delineated on Chart No. 41 to corner No. 1.

Survey of Oyster Bars, Dorchester County, Md.

LOWER NEWFOUNDLAND.

(Nanticoke River—Chart No. 41.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 19 10.26	75 54 48.56	S 55 45 E N 69 30 E N 66 21 W	N 55 44 W S 69 31 W S 66 22 E	2,769 3,088 1,008	Bivalve Church. Juliet. Ar.
2	38 19 18.72	75 54 40.88	S 48 30 E N 73 30 E N 83 59 W	N 48 30 W S 73 31 W S 83 59 E	2,783 2,805 1,134	Bivalve Church. Juliet. Ar.
3	38 19 15.10	75 54 36.78	S 48 56 E N 70 24 E N 78 58 W	N 48 55 W S 70 25 W S 78 58 E	2,615 2,738 1,260	Bivalve Church. Juliet. Ar.

UPPER NEWFOUNDLAND.

(Nanticoke River—Chart No. 41.)

1	38 19 22.74	75 54 37.36	S 45 10 E N 75 43 E S 89 13 W	N 45 09 W S 75 44 W N 89 13 E	2,807 2,678 1,220	Bivalve Church. Juliet. Ar.
2	38 19 31.22	75 54 34.46	S 40 12 E N 81 32 E S 76 53 W	N 40 11 W S 81 32 W N 76 52 E	2,966 2,547 1,332	Bivalve Church. Juliet. Ar.
3	38 19 34.96	75 54 25.58	S 35 03 E N 83 46 E S 74 23 W	N 35 04 W S 83 47 W N 74 23 E	2,922 2,297 1,592	Bivalve Church. Juliet. Ar.
4	38 19 28.28	75 54 22.42	S 36 21 E N 77 49 E S 82 50 W	N 36 20 W S 77 50 W N 82 50 E	2,690 2,250 1,631	Bivalve Church. Juliet. Ar.

NORTHWEST MIDDLEGROUND.

(Chesapeake Bay—Off Holland Island—Chart No. 42.)

1	38 06 15.00	76 10 16.74	S 59 10 E N 76 16 E S 36 52 E	N 59 07 W S 76 19 W S 36 55 W	8,409 8,292 12,872	Holland Island Bar Light. Holland Island Church Okahanikan. [Spire.
2	38 06 26.08	76 12 00.79	S 64 53 E N 81 26 E N 46 34 E	N 64 57 W S 81 30 W S 46 38 W	11,039 10,948 14,448	Holland Island Bar Light. Holland Island Church Okahanikan. [Spire.
3	38 08 03.16	76 11 24.40	S 48 36 E S 80 20 E N 55 02 E	N 48 32 W N 80 16 W S. 55 06 W	12,032 9,999 11,621	Holland Island Bar Light. Holland Island Church Okahanikan. [Spire.
4	38 07 38.78	76 10 49.45	S 48 36 E S 84 31 E N 48 58 E	N 48 33 W N 84 28 W S 49 01 W	10,789 8,966 11,392	Holland Island Bar Light. Holland Island Church Okahanikan. [Spire.

SOUTHEAST MIDDLEGROUND.

(Chesapeake Bay—Off Holland Island—Chart No. 42.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 41.56	76 09 36.60	S 62 39 E N 66 05 E N 30 13 E	N 62 37 W S 66 08 W S 30 16 W	6,925 7,641 13,222	Holland Island Bar Light. Holland Island Church Okahanikan. [Spire.
2	38 06 15.00	76 10 16.74	S 59 10 E N 76 16 E N 36 52 E	N 59 07 W S 76 19 W S 36 55 W	8,409 8,292 12,872	Holland Island Bar Light. Holland Island Church Okahanikan. [Spire.
3	38 06 29.56	76 09 05.00	S 47 53 E N 76 28 E N 30 39 E	N 47 51 W S 76 30 W S 30 42 W	7,157 6,319 11,401	Holland Island Bar Light. Holland Island Church Okahanikan. [Spire.
4	38 05 51.32	76 08 46.80	S 53 57 E N 63 55 E N 25 39 E	N 53 56 W S 63 58 W S 25 41 W	5,964 6,300 12,311	Holland Island Bar Light. Holland Island Church Okahanikan. [Spire.

BOUNDARY.

(Entrance to Kedge Straits—Chart No. 42.)

1	38 04 34.32	76 04 32.26	S 65 05 W S 33 24 E S 59 26 E	N 65 04 E N 33 24 W N 59 24 W	2,164 5,993 6,730	Holland Island Bar Light. Fog 2. Solomons Lump Light.
2	38 04 40.24	76 04 39.44	S 57 52 W S 33 52 E S 58 49 E	N 57 52 E N 33 50 W N 58 47 W	2,091 6,177 6,997	Holland Island Bar Light. Fog 2. Solomons Lump Light.
3	38 05 12.18	76 04 05.82	S 50 37 W S 22 18 E S 47 17 E	N 50 36 E N 22 17 W N 47 15 W	3,450 6,707 6,927	Holland Island Bar Light. Fog 2. Solomons Lump Light.
4	38 05 10.20	76 04 00.70	S 52 53 W S 21 25 E S 46 56 E	N 52 52 E N 21 24 W N 46 54 W	3,516 6,593 6,780	Holland Island Bar Light. Fog 2. Solomons Lump Light.
Thence along county boundary as delineated on Chart No. 42 to corner No. 5.						
5	38 04 40.76	76 04 14.80	S 65 04 W S 28 28 E S 55 41 E	N 65 03 E N 28 27 W N 55 39 W	2,677 5,840 6,452	Holland Island Bar Light. Fog 2. Solomons Lump Light.
Thence along county boundary as delineated on Chart No. 42 to corner No. 1.						

Survey of Oyster Bars, Dorchester County, Md.

HOLLAND STRAITS.
(Holland Straits—Chart No. 42.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 14.62	76 04 36.82	N 14 01 W S 39 01 W S 51 03 E	S 14 02 E N 39 01 E N 51 02 W	4, 132 2, 923 7, 607	Holland Island Church Spire. Holland Island Bar Light. Solomons Lump Light.
2	38 05 45.06	76 05 15.10	S 13 51 W S 49 55 E N 0 22 E	N 13 51 E N 49 52 W S 0 22 W	3, 427 9, 067 2, 951	Holland Island Bar Light. Solomons Lump Light. Holland Island Church Spire.
3	38 06 20.12	76 04 58.40	N 62 42 E N 13 10 W S 15 47 W	S 62 44 W S 13 19 E N 15 46 E	7, 636 1, 849 4, 654	Senator. Holland Island Church Spire. Holland Island Bar Light.
4	38 06 57.60	76 04 39.70	N 70 23 E N 59 53 W S 17 04 W	S 70 25 W S 59 53 E N 17 04 E	6, 674 1, 068 6, 007	Senator. Holland Island Church Spire. Holland Island Bar Light.
5	38 07 50.85	76 04 48.22	S 28 55 W S 11 31 W N 86 06 E	N 28 54 E N 11 31 E S 86 08 W	1, 441 7, 695 6, 529	Holland Island Church Spire. Holland Island Bar Light. Senator.
6	38 08 00.80	76 04 39.00	S 26 25 W S 12 18 W S 88 13 E	N 26 24 E N 12 17 E N 88 12 W	2, 119 8, 370 0, 271	Holland Island Church Spire. Holland Island Bar Light. Senator.
7	38 08 10.36	76 03 50.91	S 45 02 W S 19 50 W S 84 05 E	N 45 01 E N 19 48 E N 84 03 W	3, 143 9, 035 5, 014	Holland Island Church Spire. Holland Island Bar Light. Senator.
8	38 07 53.56	76 04 28.45	S 42 11 W S 15 08 W N 86 38 E	N 42 10 E N 15 07 E S 86 39 W	1, 823 7, 905 5, 997	Holland Island Church Spire. Holland Island Bar Light. Senator.
9	38 06 44.38	76 04 31.24	N 66 06 E N 49 30 W S 20 35 W	S 66 08 W S 49 32 E N 20 34 E	6, 630 1, 511 5, 659	Senator. Holland Island Church Spire. Holland Island Bar Light.
10	38 06 13.50	76 04 44.66	N 59 52 E N 21 23 W S 20 59 W	S 59 54 W S 21 23 E N 20 58 E	7, 422 2, 173 4, 558	Senator. Holland Island Church Spire. Holland Island Bar Light.
11	38 06 03.55	76 04 48.06	N 16 01 W S 21 09 W S 44 08 E	S 16 02 E N 21 09 E N 44 06 W	2, 454 4, 204 8, 061	Holland Island Church Spire. Holland Island Bar Light. Solomons Lump Light.
12	38 05 29.14	76 04 20.70	N 22 07 W S 39 26 W S 46 09 E	S 22 08 E N 39 25 E N 46 07 W	3, 798 3, 575 7, 608	Holland Island Church Spire. Holland Island Bar Light. Solomons Lump Light.

BOUNDARIES OF CRAB BOTTOMS.

EXPLANATION.

The laws providing for the survey of the oyster bars of Maryland also contain a section which requires "an accurate survey of and delineation upon the maps and charts aforesaid of all bottoms of the tributaries of the Chesapeake Bay where grass grows and it is profitable to scrape for soft shell or shedder crabs, and shall have such bottoms properly designated by permanent objects on the shore, as provided hereinbefore for natural oyster beds, bars, and rocks, which said crabbing sections shall be exempt from leasing for oyster culture."

As far as is known, the crab bottoms of Maryland¹ were the first of their kind to be surveyed and therefore they presented a new problem, which was found to differ² in many ways from that of a survey of oyster bars.

In a general way, it can be stated that the boundaries of the crab bottoms as established by the Maryland Shell Fish Commission and delineated on the "Maryland Oyster Charts" published by the Coast and Geodetic Survey, are confined to waters between the 1-fathom contour (6 feet depth of water) and the shore line. Therefore, in most cases the mean low water line of the shore has been adopted as an inner boundary for the crab bottoms, but the same system of straight lines and numbered corners used to delineate the oyster bars has been retained for defining the off-shore water boundaries.

The boundaries of the crab bottoms of Maryland, as established by the Shell Fish Commission and shown on the Coast and Geodetic Survey charts and projections and on the "leasing charts" of the Commission, are technically defined and described by a method but little different from that used for the description of the boundaries of oyster bars.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all crab bottoms in each county.

Title.—At the top of each tabular form is given the legal name of the crab bottom to be described, and the one by which it is known and designated in the published records and on the oyster charts. The adopted name of the crab bottom is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission; and when there was no local name in common use, a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the crab bottom was located.

Underneath the name, in parentheses, is given the general locality of the crab bottom and the serial number of the "Maryland Oyster Chart," on which its legal boundaries are shown.³

First column.—This column, under the heading of "Corner of bottom," gives the number corresponding to the corner of the boundary as shown on the charts and to the

¹ Crab bottoms within the meaning of the laws of Maryland were found only in Somerset and Dorchester Counties.

² See pages 69 to 70 of "First Annual Report of Maryland Shell Fish Commission" for description of "Survey of crabbing grounds."

³ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

number on the buoy marking the actual corner of the bottom. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bottom. Where a corner of a crab bottom is identical with the corner of the boundaries of one or more other crab bottoms or oyster bars, only the number of the corner of the crab bottom being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definition of the location of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"¹ and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes or arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bottom noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"² gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of bottom" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of Triangulation Stations."

Notes.—The descriptive notes relating to the shore line boundaries which appear between the descriptions of corners located on land require no explanation other than the statement that the laws of Maryland reserve to riparian owners all waters of "any creek, cove, or inlet less than one hundred yards in width at its mouth at low tide."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the crab bottoms as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey, and the "leasing charts" of the Maryland Shell Fish Commission, but as they are practically the same as those

¹ The mean magnetic variation for Dorchester County was 6° 00' west of north in 1911 and increasing at the rate of 5' yearly.

² Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

required for the relocation of oyster-bar boundaries, the description of the "Surveying Methods for Relocation of Boundaries" given in this publication under the heading of "Boundaries of Oyster Bars" will be sufficient to indicate several methods that can be used in the relocation of crab-bottom boundaries.

BOUNDARIES OF CRAB BOTTOMS.

FOX CREEK.

(Honga River—Chart No. 40.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & C. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 16 57.05	76 07 36.02	S 59 07 W	N 59 06 E	2,533	Windmill 2
			S 33 12 E	N 33 11 W	410	Paul.
			S 75 42 E	N 75 41 W	2,374	Duck
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 17 52.78	76 06 35.64	S 49 55 W	N 49 54 E	4,939	Windmill 2
			S 31 51 W	N 31 51 E	2,616	Paul.
			S 15 46 E	N 15 46 W	2,562	Duck.
3	38 17 55.54	76 06 27.32	S 50 42 W	N 50 41 E	5,168	Windmill 2.
			S 34 41 W	N 34 40 E	2,815	Paul.
			S 10 31 E	N 10 31 W	2,602	Duck.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 17 20.78	76 06 46.32	S 59 00 W	N 58 58 E	4,077	Windmill 2.
			S 43 49 W	N 43 48 E	1,584	Paul.
			S 35 15 E	N 35 15 W	1,697	Duck.
5	38 17 13.78	76 07 01.00	S 59 01 W	N 59 00 E	3,621	Windmill 2.
			S 37 55 W	N 37 55 E	1,149	Paul.
			S 49 59 E	N 49 59 W	1,789	Duck.

WINGATE.

(Honga River—Chart No. 40.)

1	38 16 28.98	76 06 26.00	S 10 16 E	N 10 16 W	2,138	Norman.
			N 50 39 E	S 50 39 W	569	Duck.
			N 69 46 W	S 69 46 E	1,744	Paul.
2	38 16 48.48	76 06 33.10	S 87 52 W	N 87 51 E	1,449	Paul.
			S 11 39 E	N 11 39 W	2,820	Norman.
			S 64 42 E	N 64 42 W	696	Duck.
3	38 17 13.78	76 07 01.00	S 59 01 W	N 59 00 E	3,621	Windmill 2.
			S 37 55 W	N 37 55 E	1,149	Paul.
			S 49 59 E	N 49 59 W	1,789	Duck.
4	38 17 20.78	76 06 46.32	S 59 00 W	N 58 58 E	4,077	Windmill 2.
			S 43 49 W	N 43 48 E	1,584	Paul.
			S 35 15 E	N 35 15 W	1,697	Duck.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 16 39.67	76 06 09.46	S 80 57 W	N 80 55 E	4,531	Windmill 2.
			S 1 22 W	N 1 22 E	2,466	Norman.
			S 63 20 E	N 63 19 W	3,154	St. Thomas Church Spire.

DUCK POINT COVE.
(Honga River—Chart No. 40.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 15 48.74	76 05 35.62	N 27 39 W	S 27 39 E	1,939	Duck.
			N 56 38 W	S 56 39 E	3,503	Paul.
			S 52 03 W	N 52 03 E	1,215	Norman.
2	38 16 19.95	76 05 54.86	N 30 16 W	S 30 16 E	770	Duck.
			N 69 47 W	S 69 48 E	2,627	Paul.
			S 13 57 W	N 13 57 E	1,855	Norman.
3	38 16 28.98	76 06 26.00	S 10 16 E	N 10 16 W	2,138	Norman.
			N 50 39 E	S 50 39 W	509	Duck.
			N 69 46 W	S 69 46 E	1,744	Paul.
4	38 16 39.67	76 06 09.46	S 80 57 W	N 80 55 E	4,531	Windmill 2.
			S 1 22 W	N 1 22 E	2,466	Norman.
			S 63 20 E	N 63 10 W	3,154	St. Thomas Church Spire.
			Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.			
5	38 16 44.75	76 05 19.00	S 82 43 W	N 82 43 E	1,352	Duck.
			S 81 20 W	N 81 18 E	5,884	Windmill 2.
			S 27 59 W	N 27 58 E	2,986	Norman.
6	38 16 38.01	76 05 11.42	N 87 55 W	S 87 56 E	1,544	Duck.
			S 83 45 W	N 83 42 E	6,053	Windmill 2.
			S 33 38 W	N 33 37 E	2,893	Norman.
			Thence from corner No. 6 along the mean low-water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.			
7	38 16 12.97	76 04 48.16	N 67 23 W	S 67 24 E	2,341	Duck.
			N 74 55 W	S 74 56 E	4,389	Paul.
			S 54 49 W	N 54 49 E	2,717	Norman.
8	38 16 03.79	76 04 45.18	N 61 38 W	S 61 39 E	2,546	Duck.
			N 71 25 W	S 71 26 E	4,555	Paul.
			S 61 22 W	N 61 21 E	2,620	Norman.
			Thence from corner No. 8 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.			

JENNY ISLAND.
(Hooper Strait—Charts Nos. 40 and 41.)

1	38 13 13.92	76 03 13.52	S 70 42 E	N 70 40 W	6,774	Sharkfin Shoal Light.
			N 84 23 E	S 84 24 W	2,064	Head.
			N 70 25 W	S 70 26 E	2,247	Hooper Strait Light.
2	38 13 22.80	76 03 51.18	N 67 53 W	S 67 53 E	1,204	Hooper Strait Light.
			N 81 11 W	S 81 13 E	7,327	Applegarth.
			S 31 37 W	N 31 36 E	4,844	Okahanikan.
3	38 13 52.32	76 04 14.88	N 88 53 W	S 88 55 E	6,611	Applegarth.
			S 41 48 W	N 41 47 E	727	Hooper Strait Light.
			S 20 26 W	N 20 25 E	5,464	Okahanikan.
4	38 14 06.46	76 04 02.62	S 87 08 W	N 87 05 E	6,944	Applegarth.
			S 38 31 W	N 38 30 E	1,302	Hooper Strait Light.
			S 21 46 W	N 21 45 E	6,026	Okahanikan.
Thence from corner No. 4 along the mean low water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 13 24.50	76 03 00.86	N 80 49 W	S 80 50 E	2,486	Hooper Strait Light.
			N 82 55 W	S 82 58 E	8,644	Applegarth.
			S 42 50 W	N 42 51 E	5,703	Okahanikan.

OKAHANIKAN.

(Hooper Strait—Charts Nos. 40, 41, and 42.)

Corner of bottom.	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
			° / '	° / '		
1	38 11 40.58	76 05 25.20	N 19 34 E N 46 02 W S 3 05 W	S 19 34 W S 46 03 E N 3 05 E	Yards. 4, 139 6, 586 678	Hooper Strait Light. Applegarth. Okahanikan.
2	38 11 53.24	76 05 37.34	N 26 12 E N 46 49 W S 14 33 E	S 26 13 W S 46 50 E N 14 33 W	3, 870 6, 057 1, 142	Hooper Strait Light. Applegarth. Okahanikan.
3	38 12 54.98	76 03 37.04	S 77 10 E N 72 35 E N 46 59 W	N 77 07 W S 72 37 W S 47 00 E	7, 199 2, 868 2, 040	Sharkfin Shoal Light. Head. Hooper Strait Light.
4	38 12 34.28	76 03 38.26	S 82 43 E N 60 26 E N 34 55 W	N 82 40 W S 60 27 W S 34 56 E	7, 108 3, 118 2, 548	Sharkfin Shoal Light. Head. Hooper Strait Light.
Thence from corner No. 4 along the mean low water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						

GRASSY.

(Hooper Strait—Charts Nos. 40 and 41.)

1	38 12 20.54	76 03 02.14	S 85 53 E N 41 11 E N 43 28 W	N 85 51 W S 41 12 W S 43 29 E	6, 107 2, 660 3, 517	Sharkfin Shoal Light. Head. Hooper Strait Light.
Thence from corner No. 1 along the mean low water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 12 34.28	76 03 38.26	S 82 43 E N 60 26 E N 34 55 W	N 82 40 W S 60 27 W S 34 56 E	7, 108 3, 118 2, 548	Sharkfin Shoal Light. Head. Hooper Strait Light.

BISHOP HEAD.

(Hooper Strait—Chart No. 41.)

1	38 12 22.84	76 01 56.04	S 83 14 W N 0 12 W N 59 22 W	N 83 12 E S 0 12 E S 59 23 E	4, 362 1, 925 4, 856	Sharkfin Shoal Light. Head. Hooper Strait Light.
2	38 12 36.16	76 02 02.08	S 77 54 E N 5 57 E N 63 15 W	N 77 52 W S 5 57 W S 63 17 E	4, 595 1, 484 4, 498	Sharkfin Shoal Light. Head. Hooper Strait Light.
3	38 12 48.03	76 02 15.00	S 74 15 E N 24 50 E N 66 08 W	N 74 13 W S 24 50 W S 66 10 E	5, 025 1, 184 4, 017	Sharkfin Shoal Light. Head. Hooper Strait Light.
4	38 12 58.42	76 02 26.23	S 71 32 E N 47 41 E N 69 18 W	N 71 30 W S 47 41 W S 69 19 E	5, 413 1, 076 3, 668	Sharkfin Shoal Light. Head. Hooper Strait Light.

Survey of Oyster Bars, Dorchester County, Md.

BISHOP HEAD—Continued.

(Hooper Strait—Chart No. 41)—Continued.

Corner of bottom.	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
5	38 13 04.22	76 02 32.48	S 70 11 E N 61 11 E N 71 24 W	N 70 09 W S 61 12 W S 71 25 E	5,635 1,098 3,387	Sharkfin Shoal Light. Head. Hooper Strait Light.
6	38 13 13.92	76 03 13.52	S 70 42 E N 84 23 E N 70 25 W	N 70 40 W S 84 24 W S 70 26 E	6,774 2,064 2,247	Sharkfin Shoal Light. Head. Hooper Strait Light.
7	38 13 24.50	76 03 00.86	N 80 49 W N 82 55 W S 42 50 W	S 80 50 E S 82 58 E N 42 51 E	2,486 8,644 5,703	Hooper Strait Light. Applegarth. Okahanikan.
Thence from corner No. 7 along the mean low-water line of the shore to corner No. 8, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
8	38 12 53.00	76 01 56.41	S 70 34 E N 0 11 E N 70 43 W	N 70 33 W S 0 11 W S 70 45 E	4,604 908 4,416	Sharkfin Shoal Light. Head. Hooper Strait Light.
9	38 12 57.84	76 01 40.72	S 66 39 E N 72 00 E N 29 06 W	N 66 37 W S 72 03 W S 29 06 E	4,275 7,982 852	Sharkfin Shoal Light. Frog. Head.
10	38 12 24.96	76 01 41.42	S 81 33 E N 12 03 W N 62 15 W	N 81 32 W S 12 04 E S 62 17 E	3,986 1,895 5,160	Sharkfin Shoal Light. Head. Hooper Strait Light.

BLOODSWORTH ISLAND.

(Hooper Strait—Charts Nos. 41 and 42.)

1	38 10 56.72	76 01 30.98	N 56 54 E N 7 56 W N 42 02 W	S 56 53 W S 7 57 E S 42 03 E	4,375 4,875 7,237	Sharkfin Shoal Light. Head. Hooper Strait Light.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 12 20.54	76 03 02.14	S 85 53 E N 41 11 E N 43 28 W	N 85 51 W S 41 12 W S 43 29 E	6,107 2,660 3,517	Sharkfin Shoal Light. Head. Hooper Strait Light.
3	38 12 24.55	76 02 57.30	S 84 30 E N 41 00 E N 46 31 W	N 84 28 W S 41 00 W S 46 32 E	5,990 2,474 3,513	Sharkfin Shoal Light. Head. Hooper Strait Light.
4	38 12 12.66	76 02 41.75	S 88 13 E N 28 04 E N 46 26 W	N 88 11 W S 28 04 W S 46 27 E	5,551 2,570 4,088	Sharkfin Shoal Light. Head. Hooper Strait Light.
5	38 11 40.82	76 02 00.26	N 78 31 E N 1 48 E N 46 15 W	S 78 33 W S 1 48 W S 46 14 E	4,535 3,343 5,627	Sharkfin Shoal Light. Head. Hooper Strait Light.
6	38 11 25.80	76 01 22.21	N 67 41 E N 13 16 W N 49 07 W	S 67 42 W S 13 16 E S 49 09 E	3,709 3,953 6,717	Sharkfin Shoal Light. Head. Hooper Strait Light.

GREAT COVE.

(Upper Tangier Sound—Charts Nos. 41 and 42.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 08 50.58	76 01 53.42	S 32 59 W S 20 28 E S 49 51 E	N 32 56 E N 20 27 W N 49 50 W	11,384 6,653 2,431	Holland Island Bar Light. Miles. Senator.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 10 56.72	76 01 30.98	N 56 54 E N 7 56 W N 42 02 W	S 56 55 W S 7 57 E S 42 03 E	4,375 4,875 7,237	Sharkfin Shoal Light. Head. Hooper Strait Light.
3	38 11 25.80	76 01 22.21	N 67 41 E N 13 16 W N 49 07 W	S 67 42 W S 13 16 E S 49 09 E	3,709 3,953 6,717	Sharkfin Shoal Light. Head. Hooper Strait Light.
4	38 11 25.80	76 00 45.38	S 88 22 E N 60 06 E N 26 07 W	N 88 19 W S 60 07 W S 26 08 E	6,861 2,828 4,286	Room. Sharkfin Shoal Light. Head.
5	38 11 25.83	76 00 19.40	S 88 11 E N 51 20 E N 33 50 W	N 88 07 W S 51 21 W S 33 51 E	6,170 2,255 4,630	Room. Sharkfin Shoal Light. Head.
6	38 10 15.54	75 59 41.40	N 11 13 E N 77 45 W S 20 31 W	S 11 13 W S 77 46 E N 20 30 E	3,853 2,587 4,732	Sharkfin Shoal Light. Crab. Senator.
7	38 09 26.74	76 00 23.48	S 10 55 W S 87 10 E N 32 41 W	N 10 55 E N 87 07 W S 32 41 E	2,838 5,546 2,607	Senator. Deal Island Church. Crab.
Thence along county boundary as delineated on Chart Nos. 41 and 42 to corner No. 1.						

NORTHEAST ISLAND.

(Holland Straits—Chart No. 42.)

1	38 08 19.36	76 03 50.91	S 45 02 W S 19 50 W S 84 05 E	N 45 01 E N 19 48 E N 84 03 W	3,143 9,035 5,014	Holland Island Church Spire. Holland Island Bar Light. Senator.
2	38 08 56.20	76 04 11.50	S 25 49 W S 14 29 W S 72 22 E	N 25 48 E N 14 28 E N 72 20 W	3,847 10,062 5,808	Holland Island Church Spire. Holland Island Bar Light. Senator.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 09 16.60	76 04 28.12	S 16 32 W S 11 14 W S 67 44 E	N 16 32 E N 11 14 E N 67 42 W	4,330 10,634 6,460	Holland Island Church Spire. Holland Island Bar Light. Senator.
4	38 09 30.80	76 04 19.64	S 17 29 W S 11 54 W S 63 03 E	N 17 29 E N 11 53 E N 63 00 W	4,853 11,148 6,453	Holland Island Church Spire. Holland Island Bar Light. Senator.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 08 49.36	76 03 08.60	S 46 02 W S 23 18 W S 68 25 E	N 46 00 E N 23 17 E N 68 24 W	4,657 10,395 4,151	Holland Island Church Spire. Holland Island Bar Light. Senator.

Survey of Oyster Bars, Dorchester County, Md.

ADAM ISLAND.

(Holland Straits—Chart No. 42.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & C. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 09.80	76 04 39.00	S 26 25 W	N 26 24 E	2,119	Holland Island Church Spire.
			S 12 18 W	N 12 17 E	8,370	Holland Island Bar Light.
			S 88 13 E	N 88 12 W	6,271	Senator.
2	38 08 16.36	76 05 08.96	S 6 41 W	N 6 41 E	8,457	Holland Island Bar Light.
			S 3 54 W	N 3 54 E	2,125	Holland Island Church Spire.
			S 86 38 E	N 86 35 W	7,078	Senator.
Thence from corner No. 2 along the mean low water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 09 14.66	76 05 14.00	S 0 09 W	N 0 09 E	4,081	Holland Island Church Spire.
			S 71 42 E	N 71 39 W	7,584	Senator.
			N 4 31 W	S 4 31 E	4,255	Okahanikan.
4	38 09 23.78	76 05 09.08	S 1 51 W	N 1 51 E	4,395	Holland Island Church Spire.
			S 69 10 E	N 69 07 W	7,563	Senator.
			N 6 45 W	S 6 45 E	3,962	Okahanikan.
Thence from corner No. 4 along the mean low water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 09 30.80	76 04 19.64	S 17 29 W	N 17 29 E	4,853	Holland Island Church Spire.
			S 11 54 W	N 11 53 E	11,148	Holland Island Bar Light.
			S 63 03 E	N 63 00 W	6,453	Senator.
6	38 09 16.60	76 04 28.12	S 16 32 W	N 16 32 E	4,330	Holland Island Church Spire.
			S 11 14 W	N 11 14 E	10,634	Holland Island Bar Light.
			S 67 44 E	N 67 42 W	6,460	Senator.
Thence from corner No. 6 along the mean low water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
7	38 08 56.20	76 04 11.50	S 25 49 W	N 25 48 E	3,847	Holland Island Church Spire.
			S 14 20 W	N 14 28 E	10,062	Holland Island Bar Light.
			S 72 22 E	N 72 20 W	5,808	Senator.
8	38 08 19.36	76 03 50.91	S 45 02 W	N 45 01 E	3,143	Holland Island Church Spire.
			S 19 50 W	N 19 48 E	9,035	Holland Island Bar Light.
			S 84 05 E	N 84 03 W	5,014	Senator.

SPRING ISLAND (DORCHESTER COUNTY).

(Holland Straits—Chart No. 42.)

1	38 06 39.86	76 03 17.80	S 37 30 W S 68 15 E N 55 19 E	N 37 28 E N 68 13 W S 55 20 W	6,484 4,926 4,992	Holland Island Bar Light Miles. Senator.
2	38 07 24.24	76 03 49.60	S 80 53 W S 25 01 W N 74 50 E	N 80 52 E N 25 00 E S 74 52 W	2,288 7,329 5,131	Holland Island Church Spire. Holland Island Bar Light. Senator.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

SPRING ISLAND (DORCHESTER COUNTY)—Continued.

(Holland Straits—Chart No. 42)—Continued.

Corner of bottom.	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
3	38 07 57.56	76 03 57.44	S 54 04 W	N 54 03 E	2,532	Holland Island Church Spire.
			S 20 25 W	N 20 24 E	8,286	Holland Island Bar Light.
			N 87 34 E	S 87 36 W	5,166	Senator.
4	38 08 19.36	76 03 50.91	S 45 02 W	N 45 01 E	3,143	Holland Island Church Spire.
			S 19 50 W	N 19 48 E	9,035	Holland Island Bar Light.
			S 84 05 E	N 84 03 W	5,014	Senator.
5	38 08 49.36	76 03 08.60	S 46 02 W	N 46 00 E	4,657	Holland Island Church Spire.
			S 23 18 W	N 23 17 E	10,395	Holland Island Bar Light.
			S 68 25 E	N 68 24 W	4,151	Senator.
6	38 08 50.58	76 01 53.42	Thence from corner No. 5 along the mean low-water line of the shore to corner No. 6, excluding any creek cove, or inlet less than 100 yards in width at its mouth at low tide.			
			S 32 59 W	N 32 56 E	11,384	Holland Island Bar Light.
			S 20 28 E	N 20 27 W	6,653	Miles.
			S 49 51 E	N 49 50 W	2,431	Senator.
Thence along county boundary as delineated on Chart No. 42 to corner No. 1.						

HOLLAND ISLAND.

(Holland Straits—Chart No. 42)

1	38 06 20.12	76 04 58.40	N 62 42 E	S 62 44 W	7,636	Senator.
			N 13 19 W	S 13 19 E	1,849	Holland Island Church Spire.
			S 15 47 W	N 15 46 E	4,654	Holland Island Bar Light.
2	38 06 36.42	76 05 31.58	S 4 20 W	N 4 20 E	5,044	Holland Island Bar Light.
			N 68 56 E	S 68 59 W	8,217	Senator.
			N 20 07 E	S 20 06 W	1,332	Holland Island Church Spire.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 08 06.56	76 05 27.80	S 3 25 W	N 3 25 E	8,083	Holland Island Bar Light.
			S 11 17 E	N 11 17 W	1,824	Holland Island Church Spire.
			S 89 21 E	N 89 18 W	7,568	Senator.
4	38 08 16.36	76 05 08.96	S 6 41 W	N 6 41 E	8,457	Holland Island Bar Light.
			S 3 54 W	N 3 54 E	2,125	Holland Island Church Spire.
			S 86 38 E	N 86 35 W	7,078	Senator.
5	38 08 09.80	76 04 39.00	S 26 25 W	N 26 24 E	2,119	Holland Island Church Spire.
			S 12 18 W	N 12 17 E	8,370	Holland Island Bar Light.
			S 88 13 E	N 88 12 W	6,271	Senator.
6	38 07 50.85	76 04 48.22	S 28 55 W	N 28 54 E	1,441	Holland Island Church Spire.
			S 11 31 W	N 11 31 E	7,695	Holland Island Bar Light.
			N 86 06 E	S 86 08 W	6,529	Senator.
7	38 06 57.60	76 04 39.70	N 70 23 E	S 70 25 W	6,674	Senator.
			N 59 53 W	S 59 53 E	1,068	Holland Island Church Spire.
			S 17 04 W	N 17 04 E	6,007	Holland Island Bar Light.

APPENDICES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey, and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *
SEC. 4. That this act shall take effect from the date of its passage.

Survey of Oyster Bars, Dorchester County, Md.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved March 4, 1909.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and ten, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and ten, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars

[Act of Congress approved June 25, 1910.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eleven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and eleven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, fifteen thousand dollars.

[Act of Congress approved March 4, 1917.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and twelve, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and twelve, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, thirteen thousand dollars * * *

[Act of the Legislature of Maryland approved April 2, 1906.]

AN ACT To establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *.

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That the following sections be, and they are hereby, added to article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis, and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie * * *.

SEC. 87. The governor of this State is hereby requested to ask the assistance of the United States Coast and Geodetic Survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section.

* * * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States Coast and Geodetic Survey and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts provided in this act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the same to the clerks of the circuit court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars, and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars, or rocks lying within the waters of the counties wherein such report and survey are filed other than those embraced in the survey authorized by this act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural

oyster beds, bars, or rocks shall be construed in all the courts of the State to be barren bottoms and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this act; provided, that the said survey and report shall not be construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this act.

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the survey, is as follows:

AN ACT Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or leveling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.¹ *And be it enacted*, That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much dispatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses (to be by them sworn or affirmed and examined), shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees, and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of Congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument, or building or any appendage thereto, erected, used, or constructed under and by virtue of the act of Congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first

¹ Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from Second Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland, had a twofold object in view.

1. To encourage an industry in oyster culture upon the barren bottoms beneath the tidewaters of the State.
2. To prevent the leasing of natural oyster bars for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

DEFINITION OF A NATURAL OYSTER BAR.

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoying them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the Commission."

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturists, may be made to yield a greater number of oysters than they now produce."

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

The definition of a natural oyster bar which very nearly approaches a reasonable and satisfactory compromise between the views of the subject held by *oystermen* on one hand and by *oyster culturists* on the other is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Todd *v.* Job T. Moore.

This definition has been adopted by the Shell Fish Commission as the basis for the determination of the status of the various oyster bottoms surveyed, and is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which

oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them, and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the act of assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and can not be located or appropriated by any individual.

APPLICATION OF DEFINITION.

Before this definition may be of use in determining, accurately and scientifically, the status of an oyster ground, its central idea, "livelihood," must be expanded into accurately determinable factors, and these factors must be combined into a practical scheme of investigating the condition of the ground under consideration.

Stated briefly, a *livelihood* is represented by a *sum of money* obtained from the sale, at a fixed *price*, of a certain *quantity of oysters* gathered in a given *time* from an allotted *area of ground*.

Knowing the value of each of these factors it becomes possible to calculate the number of oysters an oyster ground must produce per square yard in order that oystermen may secure a livelihood by working upon it.

NOTE.—The factors into which the commission resolved the livelihood problem, the value assigned to each factor, and the scheme devised for practical use in examining and applying the definition to oyster bottoms are given in outline in their second report under the heading of the preceding extract, and in detail in their first report on pages 32 to 69.

APPENDIX C.—SUMMARY OF THE PARTICULAR SURVEYING OPERATIONS WHICH CONSTITUTE AN "OYSTER SURVEY" AS NOW BEING CARRIED ON IN MARYLAND.

Explanation.—A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest practical accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Triangulation survey.—Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a framework or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

Topographic survey.—The technical records which establish the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making

resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the leasable bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

Hydrographic survey.—In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Necessary foundation for an oyster survey.—Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Special surveys and investigations pertaining to oysters.—Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations¹ making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding boat party in addition to the usual hydrographic work.² This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

The special oyster investigations³ consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affects the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

Preparation of results.—The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.⁴ This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for publication by the Government, the preparation of that part of the annual report of the commission covering the special oyster surveys and investigations, the making of the leasing charts and finished projections, and finally the filing of the oyster charts and records with the courts and the commission, thus opening a county for oyster culture.

Summary.—From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² See pp. 104 to 123 of First Annual Report of Maryland Shell Fish Commission.

³ See pp. 30 to 67 and 129 to 199 of First Annual Report of Maryland Shell Fish Commission.

⁴ No mention is made here of the large amount of administrative work of the commission, which is greatly complicated and increased by the effect of the oyster-survey operations on many thousands of people whose interests are more or less involved; or of the large amount of survey work involved in the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

Survey of Oyster Bars, Dorchester County, Md.

APPENDIX D. STATISTICS OF RESULTS OF THE COMBINED OYSTER SURVEY OPERATIONS OF THE GOVERNMENT AND STATE¹

Operations.	Anne Arundel County.	Somerset County.	Wicomico County.	Worcester County.	Calvert County.	Charles County.	St. Marys County.
Beginning of field work.....	June 29, 1906	May 2, 1907	Aug. 27, 1907	Nov. 8, 1907	May 2, 1908	Aug. 18, 1908	May 2, 1908
Filing of certified charts and reports.....	June 30, 1907	July 1, 1908	Dec. 1, 1908	Apr. 12, 1909	Dec. 1, 1909	Jan. 27, 1910	July 6, 1911
Natural oyster bars surveyed and delineated.....	91	37	15	28	41	15	124
Acres of natural oyster bars.....	33,577	27,506	2,638	1,955	12,303	2,285	25,755
Acres of oyster bars surveyed and delineated.....	3	12,108					
Clam beds surveyed and delineated.....		506					
Acres of clam beds.....		154	53	104	149	51	375
Boundary buoys located and planted.....	192	86	30	48	78	42	238
Triangulation landmarks established.....	123	125	44	116	95	32	160
Square miles of water covered by triangulation.....	120	125	44	116	95	32	160
Square miles of water covered by triangulation.....	120	125	44	116	95	32	160
Miles of examination of shell bottom with chain apparatus.....	125	340	59	63	250	38	400
Oyster investigation stations occupied.....	440	679	162	147	667	113	1,472
Tide stations established.....	1	3			2		7
Number of soundings over shell bottoms.....	37,049	17,904	3,357	3,649	11,292	1,631	19,344
Square miles covered by soundings and chain apparatus.....	58	55	3	3	30	4	57
Projection maps prepared.....	13	12	2	3	5	2	10
Leasing charts prepared.....	13	12	2	3	5	2	10
Oyster charts published.....	4	6	2	3	5	1	8
Reports published.....	2	2	2	2	2	2	2
Progress maps published.....	2	2	2	2	2	2	2

Operations.	Baltimore County.	Kent County.	Queen Annes County.	Talbot County.	Dorchester County.	Total. ²
Beginning of field work.....	Apr. 14, 1909	Apr. 14, 1909	Apr. 14, 1909	July 6, 1909	Mar. 14, 1910	
Filing of certified charts and reports.....	Aug. 10, 1911	Oct. 5, 1911	Nov. 20, 1911	July 20, 1912	Aug. 17, 1912	
Natural oyster bars surveyed and delineated.....	64	95	123	121	769	769
Acres of natural oyster bars.....	3,010	12,809	24,721	36,564	215,848	215,848
Clam beds surveyed and delineated.....					48	48
Acres of clam beds.....					11,883	11,883
Boundary buoys located and planted.....	12	211	140	559	624	560
Triangulation landmarks established.....	15	147	199	330	330	2,904
Square miles of water covered by triangulation.....	15	147	199	330	330	1,112
Square miles of water covered by triangulation.....	15	147	199	330	330	2,904
Miles of examination of shell bottom with chain apparatus.....	43	164	288	511	491	3,081
Oyster investigation stations occupied.....	0.4	1,131	1,949	1,975	2,187	11,006
Tide stations established.....	1	3	3	5		30
Number of soundings over shell bottoms.....	1,280	8,123	13,880	20,213	21,979	159,531
Square miles covered by soundings and chain apparatus.....	6	11	17	17	17	499
Projection maps prepared.....	4	10	11	21	14	29
Leasing charts prepared.....	1	3	4	7	8	63
Oyster charts published.....	1	2	2	2	2	42
Reports published.....	1	1	1	1	1	16
Progress maps published.....	1	1	1	1	1	14

¹ These statistics do not include the large amount of triangulation, topography, and hydrography resulting from previous work of the Coast and Geodetic Survey, which was utilized in the preparation of the charts and reports.² Total area of natural oyster bars of Connecticut, 5,770 acres.³ Less quantities covered by statistics of more than one county.

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

KENT COUNTY MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND
REPORT OF WORK OF UNITED STATES COAST
AND GEODETIC SURVEY IN COOPERATION
WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND
SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1912

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, October 5, 1911.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, together with certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shell fish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, 1909, 1910, 1911, and 1912.

Respectfully,

O. H. TRITTMANN, *Superintendent.*

To HON. CHARLES NAGEL,
Secretary of Commerce and Labor.

CERTIFICATION.

BALTIMORE, MD., *October 4, 1911.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in Kent County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,

Chief of Coast and Geodetic Survey Party,

Assistant, Coast and Geodetic Survey.

Examined and certified to be correct.

BALTIMORE, MD., *October 4, 1911.*

WALTER J. MITCHELL,

CASWELL GRAVE,

BENJAMIN K. GREEN,

Maryland Shell Fish Commission.

SWEPPSON EARLE,

Hydrographic Engineer.

NOTE.—Certified copies of this publication and of the charts of the natural oyster bars of Kent County were filed in the office of the clerk of the circuit court of Kent County and in the office of the Board of Shell Fish Commissioners on October 5, 1911.

CONTENTS.

	Page.
PROGRESS MAP.....	follows
LETTER OF SUBMITTAL.....	3
CERTIFICATION.....	5
INTRODUCTION:	
Publications.....	13
Cooperation of the Coast and Geodetic Survey.....	14
Cooperation of the Bureau of Fisheries.....	14
General statement of work of Coast and Geodetic Survey.....	14
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions.....	16
Organization and equipment.....	17
Chronological statement of work.....	17
Statistics.....	18
General remarks.....	19
CHARTS AND MAPS:	
Charts of natural oyster bars.....	20
Leasing charts.....	21
Projections.....	22
Progress maps.....	22
BOUNDARIES OF THE COUNTY WATERS:	
Waters within territorial limits of county.....	23
Waters contiguous to county.....	24
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation.....	25
Method of describing triangulation stations.....	25
Descriptions of triangulation stations in county and adjacent waters—	
<i>Chart No. 28</i> (Chesapeake Bay, vicinity Tolchester Beach)—	
Worton Point 2.....	28
Pooles Island Light.....	28
Pooles Island 2.....	28
Bramble.....	29
Mitchells Bluff 2.....	29
Craighill Channel Light (Front Range) (see progress map).....	30
Craighill Channel Light (Rear Range) (see progress map).....	30
Fort Howard Taller Water Tank (see progress map).....	30
Seven Foot Knoll Light (see progress map).....	30
Bodkin Point (Old Tower) (see progress map).....	31
Swan Point 3 (see also Chart No. 29).....	31
Bank (see also Chart No. 29).....	31
Tavern (see also Chart No. 29).....	32
Corr.....	32
Urie.....	33

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

<i>Chart No. 28</i> (Chesapeake Bay, vicinity Tolchester Beach)—Continued.		Page.
Spike.....		33
Elliason.....		34
Rail.....		34
Fork.....		35
Haven (see also Chart No. 29).....		35
Treasure (see also Chart No. 29).....		36
Orchard (see also Chart No. 29).....		36
Gratitude (see also Chart No. 29).....		37
<i>Chart No. 29</i> (Chesapeake Bay and entrance to Chester River)—		
Swan Point 3 (see also Chart No. 28).....		31
Bank (see also Chart No. 28).....		31
Tavern (see also Chart No. 28).....		32
Haven (see also Chart No. 28).....		35
Treasure (see also Chart No. 28).....		36
Orchard (see also Chart No. 28).....		36
Gratitude (see also Chart No. 28).....		37
Windmill Point.....		37
Stevens.....		38
Baltimore Light (see progress map).....		38
Sandy Point Light.....		38
Ring.....		39
Love Point Light.....		39
Amour.....		39
Railway Water Tank.....		40
Wickes Beach.....		40
Narrows Point (see also Chart No. 30).....		40
Macum.....		41
Thin.....		42
Muddy (see also Chart No. 30).....		42
Bridge.....		42
Railroad.....		43
<i>Chart No. 30</i> (Middle Chester River and tributaries)—		
Narrows Point (see also Chart No. 29).....		40
Muddy (see also Chart No. 29).....		42
Bluebeard.....		43
Blakeford.....		44
Rain.....		44
Break.....		45
Overton.....		45
Fir.....		45
Bay Bush Point.....		46
Gordon.....		46
Bird.....		47
Crow.....		47
Grove.....		48
Reeds.....		48
Little Gum.....		48
Weeks.....		49
Spring.....		49
Lucy.....		50
Goose.....		50

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.
 Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 30 (Middle Chester River and tributaries)—Continued.

	Page.
Prussian	51
Gray	51
Herring	51
No Road	52
Cut	52
Fore	53
Island	53
Tray	53
Inn	54
Holton Point	54
Earle	55
Hydrographic	55
Ruth	56
Melfield	56
Bath	57
Ship	57
Engineer	58
Sweepson	58
Corsica	59
Deep Cove	59
Snub	59
Lawyer	60
Drum	60
Davis	61
Isle	61
Eagle	61
Ford	62
Kinsley	62
Whale	63
Bungay	63
Locust	63
Nat	64
Mill	64
West	64
Hornor	65
King	65
Ash	66
Noth	66
Leary	66
Nest	67
Woll	67
Harp	68
Clay	68
Lovely	69
Gut	69
Philip	69
Ide	70
Hoo	70
Cult	70
Wann	71
Corn	71
Neck	72

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 30 (Middle Chester River and tributaries)—Continued.

	Page
Major.....	72
Peach.....	72
Langford.....	73
Spaniard Point 2 Upper.....	73
Quaker.....	74
Evans.....	74
Brown.....	75
Stratton.....	75
Chester.....	76
Westcott's Windmill.....	76
Corpse.....	76
Deep Point 2.....	77
Indian.....	78
Thorn.....	78
Ashland.....	79
Shippen.....	79
Burns.....	80
Oyster.....	80
Starkley.....	80
Jarrett.....	81
Booker.....	81
Journey.....	82
Melton.....	82
Cake.....	82
Pomona.....	83
Bill.....	83
Taste.....	84
Make.....	84
Down.....	84
Julius.....	85
Broad (see progress map).....	85
Nils (see progress map).....	86
Wilmers (see progress map).....	86
Robertson Windmill (see progress map).....	86
Robertson (see progress map).....	87
Southeast (see progress map).....	87
Thorsten (see progress map).....	87
Blank (see progress map).....	88
Rolphs (see progress map).....	88

BOUNDARIES OF OYSTER BARS:

Explanation.....	90
Method of describing boundaries.....	91
Surveying methods for relocation of boundaries.....	92

Boundaries of natural oyster bars—

Chart No. 28 (Chesapeake Bay, vicinity of Tolchester Beach)—

Phoenix Shoal.....	95
Deep Shoal.....	95
Coal Lump.....	96
Gales Lump.....	96
Mitchells Bluff Buoy.....	97
Tolchester Lump.....	97
Hodges.....	98

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars—Continued.

Chart No. 28 (Chesapeake Bay, vicinity of Tolchester Beach)—Continued.

	Page
Swan Point (see also Chart No. 29).....	99
Swan Creek.....	100
Rockhall (see also Chart No. 29).....	100
White Horse (see also Chart No. 29).....	100
The Haven (see also Chart No. 29).....	101
Deep Landing Hole (see also Chart No. 29).....	101
Little Neck (see also Chart No. 29).....	101
Tavern Creek (see also Chart No. 29).....	102

Chart No. 29 (Chesapeake Bay and entrance to Chester River)—

Swan Point (see also Chart No. 28).....	99
Rockhall (see also Chart No. 28).....	100
White Horse (see also Chart No. 28).....	100
The Haven (see also Chart No. 28).....	101
Deep Landing Hole (see also Chart No. 28).....	101
Little Neck (see also Chart No. 28).....	101
Tavern Creek (see also Chart No. 28).....	102
Windmill Flats.....	102
Muddy Drain.....	102
Huntingfield.....	103
Gum Spring.....	103
White Marsh.....	104
Under The Bar.....	104
Hickory Thicket.....	105
East Neck Bay.....	105
Entrance Lumps.....	106
Wickes Beach.....	106
Dredge Rock.....	106
Side Shoal (see also Chart No. 30).....	107
Mud (see also Chart No. 30).....	107
Ferry (Kent County).....	107
Buoy Rock (see also Chart No. 30).....	108

Chart No. 30 (Middle Chester River and tributaries)—

Side Shoal (see also Chart No. 29).....	107
Mud (see also Chart No. 29).....	107
Buoy Rock (see also Chart No. 29).....	108
Hail Creek.....	108
Hail Point.....	109
Black Buoy.....	109
Durdin.....	109
Belts.....	110
Piney Point (Kent County).....	110
Bay Bush Point.....	111
Bluff Point.....	111
Chester River Middleground.....	112
Limekiln.....	112
Willow Bottom.....	112
Nichols.....	113
Hudson.....	113
Sand Thistle.....	113
Boat House.....	114
Drum Point.....	114
Davis Creek.....	115

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars—Continued.

Chart No. 30 (Middle Chester River and tributaries)—Continued.

	Page.
Island Point.....	115
Eagle Point.....	116
Wilsons Point.....	116
Kings Creek.....	116
Bailey.....	117
Philips.....	117
Ware.....	117
Ebb Point.....	118
Cliff.....	118
Commegys Bight.....	119
Sheep (Kent County).....	119
Deep Point.....	119
Shippen Creek.....	120
Haddaway.....	120
Hollyday (Kent County).....	120
Melton Point.....	121
Northwest (Kent County)	121

APPENDICES:

Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.....	123
Appendix B.—“The Haman Oyster Culture Law” (extract from Second Report of Shell Fish Commission).....	126
Appendix C.—Summary of the particular surveying operations which constitute an “oyster survey” as now being carried on in Maryland.....	128
Appendix D.—Statistics of results of the combined operations of the Government and State..	130

SURVEY OF OYSTER BARS, KENT COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws ¹ authorizing the work and the natural division of the surveying operations ² of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.³ The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey in charge of the work of that service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.⁴

The publications prepared and issued by the State under the direction of the Shell Fish Commission consist of annual reports ⁵ of all the operations of the Commission performed under the provisions of the laws of Maryland,⁶ including results of biological

¹ See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

² See Appendix C for a summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.

³ These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C. The publications now ready for issue are those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, St. Marys, Baltimore, and Kent Counties.

⁴ The technical records and charts for each county are published separately, on account of the requirements of the oyster-culture laws of the State and the practical considerations which make it desirable to have each county "opened up" for oyster culture as soon as practicable after the completion of its survey. For these reasons and the fact that these reports are each arranged for distribution and use in one county only without reference to other published records, much of the text of this publication is of necessity identical with similar previous publications for other counties.

⁵ These reports can be obtained by application to the Shell Fish Commission, Marine Bank Building, Baltimore, Md. They are issued annually in October, and the first, second, and third reports are now available for distribution.

⁶ See Appendix B for an extract from the "Second Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman Oyster Culture Law."

and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.¹

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential as a foundation for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.² A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the Bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL STATEMENT OF WORK OF COAST AND GEODETIC SURVEY.³

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need very little other summary than is indicated by the published "Charts of Natural Oyster Bars" and the index of hydrographic projections and triangulation stations shown on the county progress maps attached to each report.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

³ For a detail statement of the very large amount of excellent oyster-survey work of the Maryland Shell Fish Commission see the "Annual Reports of the Maryland Shell Fish Commission."

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster-survey operations.

The hydrographic projections and published charts are prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shell-fish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to and permanently fixed by published technical descriptions which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way, and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County":

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last 65 years.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY IN KENT COUNTY.

INSTRUCTIONS.

The following letters, together with the laws¹ of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the survey at Washington, have proved very beneficial to the work and are greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

His Excellency HON. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

LAWRENCE O. MURRAY, *Assistant Secretary.*

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the Commissioners, prepare a programme of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,
U. S. C. and G. S. Steamer Endeavor, Baltimore, Md.

¹ For these laws see Appendix A.

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the field and the preparation for publication of oyster charts and technical records in the office at Washington.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster*, the Coast and Geodetic Survey party has had the constant use of the large steam launch *Inspector* and several other boats furnished by its own service, and the occasional use of the Bureau of Fisheries launch *Canvasback*¹ and the steamer *Governor McLane*² of the State fishery force.

The greater part of the equipment of instruments for the operations of both the Government and State has been furnished by the Coast and Geodetic Survey and consists of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.

The field work of the Coast and Geodetic Survey in Kent County³ dates from April 14, 1909, when the Maryland Shell Fish Commission house boat *Oyster* was moved from her winter quarters at Baltimore to an anchorage off Rock Hall Landing in Kent County. The surveying operations carried on from this harbor covered a period of about six weeks in which practically all triangulation was completed on the Chesapeake Bay shores of both Kent and Baltimore Counties as well as a considerable part of the same class of work in the mouth of Chester River in both Kent and Queen Annes counties.

On May 26, 1909, the *Oyster* was moved from Rock Hall Landing to an anchorage in the upper part of Chester River near Cliffs Landing where she remained for a little over a month.

On June 30, 1909, the house boat was moved to a temporary anchorage off Queens-town in the lower Chester River. This date marked the practical completion of the work in Chester River, the triangulation of which was especially notable for the month of June on account of there having been 92 triangulation stations established which were all marked by monuments and signals, locations described, and then occupied for theodolite observations.

On July 1, 1909, the house boat *Oyster* was towed by the State steamer *Governor McLane* to Baltimore Harbor, where the following four days, which included a Sunday and a holiday, were spent in taking on coal, water, and other supplies.

¹ By courtesy of Dr. H. F. Moore, United States Bureau of Fisheries.

² By courtesy of Capt. James A. Turner, commanding.

³ The field work of Kent, Baltimore, and Queen Annes counties was so intermixed that the chronological statement of the work of one of these counties necessarily includes a considerable part of the work of the other two counties.

On July 6, 1909, the *Governor McLane* again moved the *Oyster*, this time from Baltimore to an anchorage in Queen Annes County in the Eastern Bay entrance of Kent Narrows. From this harbor as headquarters a few additional triangulation observations were made in Kent County although the greater part of work while the house boat was at this anchorage was confined to Queen Annes and Talbot counties.

On July 22, 1909, the house boat was again moved to the vicinity of Rock Hall Landing to complete certain oyster survey operations not finished when the *Oyster* was anchored there in the spring.

On August 5, 1909, the house boat was towed to Worton Creek which is located at the extreme northern limit of oyster growth in Chesapeake Bay. From this harbor all the remaining oyster survey work of the Coast and Geodetic Survey in both Kent and Baltimore counties was completed, although some weeks later a Maryland Shell Fish Commission party returned to these counties to finish certain oyster investigations and hydrographic observations.

The office work connected with the "oyster survey" of Kent County, including compilations of geographic information and drafting necessary for the preparation for publication of the oyster charts and the technical records, was continued intermittently with the office work of other counties from the beginning of the field work in Kent County to the time of filing of the certified oyster charts and technical reports in the archives of the Shell Fish Commission and with the clerk of the circuit court of Kent County on October 5, 1911.

STATISTICS.¹

Landmarks and triangulation signals erected.....	135
Monuments planted to mark triangulation stations.....	133
Triangulation stations occupied for observations of horizontal angles.....	133
Old triangulation stations recovered.....	20
New triangulation stations established.....	127
Total old and new triangulation stations marked and described.....	147
Linear miles of shore line covered by triangulation (approximate).....	110
Square miles covered by triangulation (approximate).....	130
Hydrographic projections prepared and completed as records of oyster boundaries.....	10
Triangles computed.....	270
Geographic positions computed.....	132
Corners of oyster boundaries established by computation.....	271
Back azimuths and distances computed from corners of boundaries to triangulation stations.....	813
Descriptions of triangulation stations prepared for publication.....	147
Descriptions of oyster boundaries prepared for publication.....	64
"Charts of Natural Oyster Bars" prepared for publication.....	3
Progress map prepared for publication.....	1

¹ These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of Kent County, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland. See Appendix D of this publication for "Statistics of results of combined operations of the Government and the State."

GENERAL REMARKS.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore, of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unfailing tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the Commission, who, as editor of the Commission's annual report and Commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Mr. Benjamin K. Green, treasurer of the Commission, who has looked after the equipment and commissary of the house boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Mr. Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts¹ of the natural oyster bars of Kent County, published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, consist of three sheets covering a portion of the waters of Chesapeake Bay and all of Chester River, including all oyster-producing bottoms of Kent County. They are published on a scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inch to a statute mile) and are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the Circuit Court of Kent County and in the office of the Commission, as required by the oyster laws of Maryland.

In addition to the oyster bar and other boundaries, the charts show the location and name of all landmarks (U. S. Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography² necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the heading "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a particular oyster bar or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² Much of the detail of the inshore topography was obtained from the excellent map of Kent County, prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the U. S. Geological Survey.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shell fish industries. The 1-fathom contour (6 feet) and the 5-fathom curve (30 feet) correspond in a general way to the inner and outer limits of all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with Kent County are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart within the boundaries of the different shell fish bottoms.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Kent County, like those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, St. Marys, and Baltimore counties, have been prepared under the direction of the hydrographic engineer of the Commission. They are constructed on polyconic projections which are based on the United States standard datum of the Coast and Geodetic Survey, and are made on the scales of 1 part in 5,000 or 1 part in 10,000 as the needs of oyster culture may require.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to the area under consideration, and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as possible.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in the Marine Bank Building at Baltimore.

PROJECTIONS.

The polyconic projections¹ covering Kent County waters are 10 in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, but the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission were plotted by the draftsman of the Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore lines, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster-bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the archives of the Shell Fish Commission.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the United States Coast and Geodetic Survey in Kent County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress maps² accompanying the first and second annual reports of the Maryland Shell Fish Commission were prepared under the direction of the hydrographic engineer of the Commission. They are on the scale of 1 part in 400,000, and show the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey.

¹ For the scheme of these projections see the progress map at the end of this publication.

² These maps and reports can be obtained by application to Maryland Shell Fish Commission, Marine Bank Building, Baltimore, Md.

BOUNDARIES OF THE COUNTY WATERS.¹

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line² between the waters "within the territorial limits" of Kent County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the "oyster" charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Following the boundary line between Kent County and Cecil County along the middle of Sassafras River as laid down on the "Progress map" accompanying the report of "Survey of Oyster Bars, Kent County, Maryland," to a point defined by the intersection of this boundary line with a straight line across the mouth of Sassafras River defined by a point at its northern extremity situated on the northern side of Sassafras River in latitude $39^{\circ} 23' 15''.0$ and longitude $76^{\circ} 02' 22''.5$ and by a point at its southern extremity situated on the southern side of Sassafras River in latitude $39^{\circ} 22' 15''.6$ and longitude $76^{\circ} 03' 24''.0$; thence along a straight line across the southern part of the mouth of Sassafras River to a point situated on the southern side of Sassafras River defined by latitude $39^{\circ} 22' 15''.6$ and longitude $76^{\circ} 03' 24''.0$; thence along the mean low water line or a line across the mouth of all inlets less than 100 yards in width, as the case may be, of the southern shore of the entrance to Sassafras River, around Howell Point and along the eastern shore of Chesapeake Bay to a point situated on the northern side of Still Pond defined by latitude $39^{\circ} 20' 35''.0$ and longitude $76^{\circ} 08' 11''.8$; thence in a straight line across the entrance to Still Pond to a point situated on the southern side of Still Pond defined by latitude $39^{\circ} 20' 02''.0$ and longitude $76^{\circ} 08' 46''.5$; thence along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay around Plum Point and Worton Point to a point situated on the northern side of Worton Creek defined by latitude $39^{\circ} 17' 56''.7$ and longitude $76^{\circ} 10' 40''.8$; thence in a straight line across the entrance of Worton Creek to a point situated on the southern side of Worton Creek defined by latitude $39^{\circ} 17' 28''.3$ and longitude $76^{\circ} 10' 54''.3$; thence along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay across the mouth of Fairlee Creek past Tolchester Beach to a point situated on Swan Point defined by latitude $39^{\circ} 08' 19''.0$ and longitude $76^{\circ} 16' 42''.1$; thence in a straight line across the entrance to Swan Creek and Rockhall Harbor to a point situated on Huntingfield Point defined by latitude $39^{\circ} 07' 16''.0$ and longitude $76^{\circ} 14' 57''.4$; thence along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on Wilson Point defined by latitude $39^{\circ} 03' 11''.2$ and longitude $76^{\circ} 13' 40''.0$; thence in a straight line across the mouth of a small bay to a point situated on the eastern side of the entrance to Chester River defined by latitude $39^{\circ} 02' 45''.3$ and

¹ For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, Superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

² See Charts of Natural Oyster Bars, published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

longitude $76^{\circ} 14' 05''.3$; thence in a straight line ending at a point situated on Love Point on the western side of Chester River defined by latitude $39^{\circ} 02' 25''.5$ and longitude $76^{\circ} 18' 10''.0$ to a point on this straight line defined by its intersection with the channel boundary line between Kent County and Queen Annes County as laid down on "Chart No. 29, Natural Oyster Bars, Maryland;" thence up the channel of Chester River following the boundary line between Kent County and Queen Annes County as laid down on "Charts Nos. 29 and 30, Natural Oyster Bars, Maryland;" thence continuing up the channel of Chester River following the boundary line between Kent County and Queen Annes County to the State boundary line between Maryland and Delaware.¹

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the United States Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Baltimore," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county and the waters contiguous to but not within the territorial limits of adjacent counties.

This boundary line has been delineated on "Charts of Natural Oyster Bars," and "Progress Maps" published by the Coast and Geodetic Survey, and is technically described and defined as follows:

Commencing at a point defined by the intersection of a straight line across the mouth of Sassafras River which straight line is defined by a point at its northern extremity situated on the northern side of Sassafras River in latitude $39^{\circ} 23' 15''.0$ and longitude $76^{\circ} 02' 22''.5$ and by a point at its southern extremity situated on the southern side of Sassafras River in latitude $39^{\circ} 22' 15''.6$ and longitude $76^{\circ} 03' 24''.0$ and the boundary line between Kent County and Cecil County along the middle of Sassafras River as laid down on the "Progress map" accompanying the report of "Survey of Oyster Bars, Kent County, Maryland;" thence in a straight line along the channel of the entrance to Sassafras River and across a part of Chesapeake Bay to a point in Chesapeake Bay about $1\frac{1}{2}$ miles northwest by west of Howell Point and $1\frac{3}{4}$ miles south-southeast of Stony Point defined by latitude $39^{\circ} 22' 55''.0$ and longitude $76^{\circ} 08' 05''.0$; thence in a straight line with Chesapeake Bay to a point about $2\frac{1}{4}$ miles west of Worton Point and $2\frac{1}{2}$ miles northeast of Pooles Island defined by latitude $39^{\circ} 19' 00''.0$ and longitude $76^{\circ} 13' 43''.5$; thence in a straight line with Chesapeake Bay to a point about $1\frac{1}{8}$ miles south of Pooles Island and $3\frac{3}{8}$ miles west by south of Fairlee Creek defined by latitude $39^{\circ} 15' 30''.0$ and longitude $76^{\circ} 16' 20''.4$; thence in a straight line with Chesapeake Bay to a point about 4 miles west by north of Swan Point and $3\frac{3}{8}$ miles east of Seven Foot Knoll Light defined by latitude $39^{\circ} 09' 10''.6$ and longitude $76^{\circ} 21' 00''.0$; thence in a straight line with Chesapeake Bay to a point about $2\frac{3}{8}$ miles east of Baltimore Light and $3\frac{3}{8}$ miles west of Love Point Light defined by latitude $39^{\circ} 03' 30''.0$ and longitude $76^{\circ} 21' 00''.0$; thence along the boundary line between Kent County and Queen Annes County across a part of Chesapeake Bay and along the channel of the entrance of Chester River as laid down on "Chart No. 29, Natural Oyster Bars, Maryland," to the intersection of this county boundary line with a straight line defined by a point at its eastern extremity situated on the eastern side of the entrance of Chester River in latitude $39^{\circ} 02' 45''.3$ and longitude $76^{\circ} 14' 05''.3$ and by a point at its western extremity situated on Love Point on the western side of the entrance to Chester River in latitude $39^{\circ} 02' 25''.5$ and longitude $76^{\circ} 18' 10''.0$.¹

¹ Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION.

The oyster laws of Maryland authorizing the survey to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of location and character of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking a landmark has only an indefinite idea of its location. They gradually proceed from description of the general locality of a landmark to the descriptions of its immediate surroundings. This is followed by specific details of the character of the center and reference marks and a "round" of reference angles and distances which in themselves frequently contain enough information to furnish an independent and reliable location of the triangulation station.

METHOD OF DESCRIBING TRIANGULATION STATIONS.

The separate descriptions of triangulation stations should not be used without reading the following explanation of the method of describing the triangulation stations, as it contains certain details that are common to all the landmarks described in this publication and which are omitted in the separate descriptions as being needless repetitions:

Name.—The title at the top of each separate description is the name by which the landmark or triangulation station is known and designated in all work and published oyster records or oyster charts of both the Government and State. The selection of the name is usually left to the triangulator establishing the station, and it may or may not have geographic or other significance in reference to the locality.

General locality.—Under this heading is given the general locality of the landmark in reference to well-known and prominent natural or artificial features, such as the

nearest body of water, town, river, steamer wharf, well-defined point of land, church, or any other feature that is likely to remain both permanent and prominent.

This heading also covers a reference to the published chart or map which shows the location of the station most clearly. Nearly all the triangulation stations described in this publication are plainly indicated by name and a triangulation symbol on the published charts of oyster bars of Maryland. In this case they are referred to by serial number only, the words "charts of oyster bars of Maryland" being omitted to avoid needless repetition. These published oyster charts are on the large scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inches to a statute mile) and show the location of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Immediate locality.—Under this heading is given the description of the "observed station" in reference to its immediate surroundings. This is supposed to include a statement of the station's estimated elevation above high water or some other well-defined level of the locality, such as a road or house; the character of the ground on which it is located, such as marsh land, sand beach, cultivated field, or meadow; estimated bearings in points of the compass and estimated distances in yards *from* (not *to*) easily recognized features, such as extreme end of point, edge of bluff, bank of creek, line of telephone poles, shore line, barn, house, fence, ditch, trees, or any other definite detail, such as being on range with the tangent of an island and a church; and so forth.

When a standard monument has been established near the station as a "reference station," this heading also covers a statement of the true bearing of the monument in degrees and minutes and its measured distance in meters, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached and might be mistaken for the center mark of the "observed station" unless special attention is called to it.

The distinction between the "observed station" and "reference station" should be carefully noted by anyone making use of the description of stations for any future surveying operations.

The "observed station" is located at the particular triangulation point covered by the description of stations, and is the one whose geographic position is first computed, as it is the point which was "occupied" and "observed on" for horizontal angles. However, in spite of the primary importance of the location of the "observed station," it will be noted from the description of stations that frequently it is not marked as well as the "reference station," and in many instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate "observed stations" on edges of banks and ends of points of land, which in the tide-water section of Maryland generally means they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the great need of "reference stations," if the frequent reestablishment of a new framework of triangulation is to be avoided.

The chief reason and need for the establishment of the "reference station," or secondary station, as it might be well named, is explained in the preceding paragraph, but in several instances other reasons, such as the location of the "observed station" on an unstable sand dune, in a cultivated field, in front of a residence, or other places objectionable to the landowner, have led to establishment of "reference stations."

The location of the "reference station" in relation to the "observed station" is fixed for plotting on charts or for computation of its geographic position by checked measurements of its distances and azimuth from the "observed station."¹

Marks.—Under this heading is given a description of the character of the permanent monuments or other marks of the location of the "observed station," and of the "reference station," where one has been established.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground, unless otherwise stated.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

References.—Under this heading are given the "rounds" of directions and distances to all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described, this, if possible, being a lighthouse, church spire, or other permanent and prominent point. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing ² of the initial object is always given in parentheses alongside its name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by horizontal angles or for the relocation of corner buoys of oyster-bar boundaries by the method of compass directions described in this publication under the heading of "Boundaries of oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters,"

¹ Geographic coordinates (latitude, longitude, distance, and azimuth) relating to any of the "observed stations" or of the "reference stations" described in this publication can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² The mean magnetic variation for Kent County was $6^{\circ} 15'$ west of north in 1911 and increasing at the rate of $5'$ yearly.

however, are accurate to the degree indicated by their decimals, and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of angular measure with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

WORTON POINT 2.

General locality.—Eastern shore of Chesapeake Bay, on Worton Point, about $1\frac{3}{4}$ miles north of mouth of Worton Creek and $4\frac{1}{2}$ miles northeast of north end of Pooles Island. (See Chart No. 28.)

Immediate locality.—Observed station is on tree and bush fringed bluff about 30 feet above high water, 2 yards east-southeast of edge of bluff and 1 yard south-southwest of a very small ravine. Cement monument marking reference station is 14.05 meters S $61^{\circ} 17'$ E of observed station.

Marks.—Observed station is center of 4-inch tile pipe with top 6 inches below surface of ground. Subsurface mark is center of 4-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Pooles Island 2" (S $62^{\circ} 18'$ W).....	0	00	00	$4\frac{3}{4}$ miles.
Right tree on Pooles Island.....	3	17	..	$4\frac{1}{2}$ miles.
South peak of small house.....	42	46	..	$4\frac{1}{2}$ miles.
Left peak of house.....	74	43	..	$4\frac{1}{2}$ miles.
Nail in blaze in ash tree ($2\frac{1}{2}$ inches diameter).....	88	42	40	1.06 meters.
Chimney outside of right end of old house..	94	07	..	$3\frac{1}{2}$ miles.
Chimney near left end of roof of house with gables.....	116	04	..	$4\frac{1}{4}$ miles.
Nail in blaze in ash tree (3 inches diameter). ..	154	28	10	4.24 meters.
REFERENCE STATION.....	236	25	00	14.05 meters.
Nail in blaze in locust tree (5 inches diameter).....	310	44	20	4.61 meters.

POOLES ISLAND LIGHT.

General locality.—Upper Chesapeake Bay, on northwest side of Pooles Island. (See Chart No. 28.)

Immediate locality.—Observed station is on a detached tower known as Pooles Island Lighthouse.

Marks.—Observed station is center point of lantern on tower.

References.—

	°	'	"	
"Craighill Channel Light (Front Range)"	0	00	00	10 miles.
(S $44^{\circ} 19'$ W).....	0	00	00	

POOLES ISLAND 2.

General locality.—Upper Chesapeake Bay, on Pooles Island, about one-fourth mile southeast of Pooles Island Light and one-fourth mile north by west of Pooles Island Wharf. (See Chart No. 28.)

Immediate locality.—Observed station is in a peach orchard on highest ground on northern part of Pooles Island, about 500 yards southeast of Pooles Island Light and 370 yards north by west of farmhouse. The angle at the southwest corner of the farmhouse between the windmill at the barn and the observed station is 84° , and the angle at the observed station between the light tower and the fog-bell tower is $2^{\circ} 47'$.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument. (NOTE.—These marks replace old ones of 1896.)

References.—

	°	'	"	
"Pooles Island Light" (N 47° 16' W).....	0	00	00	452 meters.
Break in bluff on east shore of bay showing through peach trees.....	153	12	..	3 $\frac{1}{4}$ miles.
Center of chimney of small house in rear of dwelling.....	215	00	..	$\frac{1}{4}$ mile.
Center of middle one of three chimneys on dwelling.....	218	03	..	$\frac{1}{4}$ mile.
Center of cupola on small building.....	220	50	..	$\frac{1}{4}$ mile.
Near gable of barn.....	238	06	..	$\frac{1}{4}$ mile.
Windmill.....	241	56	..	$\frac{1}{4}$ mile.
Center one of four nails in apple tree.....	336	24	10	33.72 meters.

BRAMBLE.

General locality.—Eastern shore of Chesapeake Bay, about 3 miles southeast of center of Pooles Island, 3 miles north-northeast of Tolchester Beach, and 1 $\frac{1}{4}$ miles southwest of entrance to Fairlee Creek. (See Chart No. 28.)

Immediate locality.—Observed station is on a tree and bush fringed bluff about 30 feet above high water, 3 yards east of edge of bluff, 3 yards west of edge of cultivated field, 35 yards southwest of trees at edge of gully, and 200 yards west of other trees. Cement monument marking reference station is 47.16 meters N 67° 05' E of observed station.

Marks.—Observed station is 2-inch stub projecting 3 inches above surface of ground. Subsurface mark is beer bottle buried below base of stub. Reference station is center point of triangle on standard cement monument projecting 2 inches above surface of ground.

References.—

	°	'	"	
"Craighill Channel Light (Rear Range)" (S 78° 44' W).....	0	00	00	9 $\frac{1}{8}$ miles.
Left tree on Pooles Island.....	37	53	..	3 miles.
Windmill on middle of long building on Pooles Island.....	54	00	..	2 $\frac{7}{8}$ miles.
North peak of house with several gables on Pooles Island.....	55	21	..	2 $\frac{7}{8}$ miles.
"Pooles Island Light".....	57	19	00	3 $\frac{3}{8}$ miles.
REFERENCE STATION.....	168	21	00	47.16 meters.
Cupola on barn.....	250	24	40	1 mile.
"Craighill Channel Light (Front Range)"..	344	34	10	10 $\frac{1}{4}$ miles.
"Fort Howard Teller Water Tank".....	354	30	00	12 $\frac{1}{2}$ miles.
Left one of two smokestacks at Sparrows Point.....	359	35	..	14 $\frac{1}{4}$ miles.

MITCHELLS BLUFF 2.

General locality.—Eastern shore of Chesapeake Bay, on Mitchells Bluff, just north of first break in bluff, about five-eighths mile north-northeast of Tolchester Beach Wharf. (See Chart No. 28.)

Immediate locality.—Observed station is in cultivated ground about 30 feet above high water, 13 yards southeast of edge of bluff, 50 yards northeast of point of gully where fishermen haul up gear, 70 yards south of small clump of trees, and one-fourth mile northwest of a large farmhouse.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is wire in center of 2-inch tile pipe buried with top 2 inches below base of monument. (NOTE.—Subsurface mark is either a part or replaces the original one of 1896.)

References.—

"Craighill Channel Light (Rear Range)"	°	'	"	
(N 87° 52' W).....	0	00	00	8¾ miles.
Chimney at left end of house on opposite shore.....	57	00	..	6¼ miles.
Chimney at left end of house on Pooler Island.....	71	11	..	4¼ miles.
Chimney on middle of roof of building beyond trees.....	170	10	..	⅝ mile.
Spindle of weather vane on middle cupola of barn.....	200	28	30	¼ mile.
Near corner of large west chimney of house..	210	54	..	¼ mile.
West peak of barn.....	260	07	..	⅜ mile.
"Seven Foot Knoll Light".....	330	18	30	10¼ miles.
"Craighill Channel Light (Front Range)"..	341	20	40	8¾ miles.

CRAIGHILL CHANNEL LIGHT (FRONT RANGE).

General locality.—Western side of Chesapeake Bay, about 2 miles offshore and about 2¾ miles east of North Point at entrance to Patapsco River. (See progress map.)

Immediate locality.—Observed station is on dwelling on cylindrical foundation known as Craighill Channel Light (Front Range).

Marks.—Observed station is center point of lantern on Craighill Channel Light (Front Range).

References.—

"Craighill Channel Light (Rear Range)"	°	'	"	
(N 0° 01' W).....	0	00	00	2¾ miles.

CRAIGHILL CHANNEL LIGHT (REAR RANGE).

General locality.—Western side of upper Chesapeake Bay about 200 yards offshore from the southwestern end of Hart Island. (See progress map.)

Immediate locality.—Observed station is on a tall square pyramidal skeleton steel frame structure known as Craighill Channel Light (Rear Range).

Marks.—Observed station is center point of lantern on Craighill Channel Light (Rear Range).

References.—

"Craighill Channel Light (Front Range)"	°	'	"	
(S 0° 01' E).....	0	00	00	2¾ miles.

FORT HOWARD TALLER WATER TANK.

General locality.—Northern side of entrance to Patapsco River about one-half mile north-northwest of North Point. (See progress map.)

Immediate locality.—Observed station is the taller of two steel water tanks on steel towers at Fort Howard.

Marks.—Observed station is center point of pipe attached to center of bottom of tank.

References.—None necessary.

SEVEN FOOT KNOLL LIGHT.

General locality.—Western side of Chesapeake Bay off entrance to Patapsco River about 2¼ miles north-northeast of Bodkin Point and ¾ miles southeast of North Point. (See progress map.)

Immediate locality.—Observed station is on an octagonal screw pile structure known as Seven Foot Knoll Lighthouse.

Marks.—Observed station is center point of lantern on Seven Foot Knoll Light.

References.—

"Bodkin Point (Old Tower)" (S 30° 03' W) ..	0	00	00	1½ miles.
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BODKIN POINT (OLD TOWER).

General locality.—Southern side of entrance to Bodkin Creek on Bodkin Point. (See progress map.)

Immediate locality.—Observed station is about 15 yards east of an old stone dwelling on top of an old tower formerly used as a lighthouse.

Marks.—Observed station is center of drill hole about 2 inches in diameter and 3 inches deep in stone platform on and near center of top of tower.

References.

	°	'	"	
"Seven Foot Knoll Light" (N 30° 04' E)...	0	00	00	1½ miles.

SWAN POINT 3.

General locality.—Eastern shore of Chesapeake Bay on Swan Point about 5½ miles south-southwest of Tolchester Beach Wharf and 7 miles north of Love Point. (See Chart No. 28.)

Immediate locality.—Observed station is on sand and marsh point about 2 feet above high water, 5 feet east of shore, 60 yards south-southwest of a fisherman's cabin, and 250 yards from the extreme end of Swan Point. Cement monument marking old reference station is in marsh 21.43 meters N 89° 13' E of observed station. Standard cement monument marking new reference station is on line to old reference station 13.26 meters N 89° 13' E of observed station.

Marks.—Observed station is ¼-inch copper rod set in an 8-inch square cement monument with top about 5 inches below surface of ground. Subsurface mark is the neck of a flask set in cement about 4 feet below the surface. New reference station is center point of triangle on standard cement monument. Old reference station is eastern one of two ¼-inch copper rods in an 8-inch cement monument.

References.

	°	'	"	
"Love Point Light" (S 2° 11' W).....	0	00	00	5¾ miles.
"Baltimore Light".....	46	07	00	8½ miles.
Stack on garbage plant at Bodkin Point....	82	21	..	8¼ miles.
"Seven Foot Knoll Light".....	95	04	50	7 miles.
Left stack at Sparrows Point.....	111	12	..	12¼ miles.
"Fort Howard Teller Water Tank".....	112	28	20	9¾ miles.
"Craighill Channel Light (Front Range)"..	114	59	50	7 miles.
"Craighill Channel Light (Rear Range)"... 131	46	20	..	8¾ miles.
Chimney of cabin.....	203	54	..	58 yards.
Gable of Rockhall Wharf house.....	264	07	..	1 mile.
OLD REFERENCE STATION.....	267	02	20	21.43 meters.
NEW REFERENCE STATION (STANDARD CE- MENT MONUMENT).....	267	02	20	13.26 meters.
Chimney of house to right of Windmill Point.....	292	12	..	2 miles.
Gable of barn.....	303	49	..	2½ miles.
Gable of barn near Wickes Beach.....	340	52	..	7½ miles.

BANK.

General locality.—Eastern shore of Chesapeake Bay on western side of entrance to Tavern Creek, about ⅝ mile northeast of Swan Point. (See Charts Nos. 28 and 29.)

Immediate locality.—Observed station is in a cultivated field about 7 feet above high water, 12 yards inshore, and 2 yards from edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (S 7° 27' W).....	0	00	00	6½ miles.
"Baltimore Light".....	42	32	50	9 miles.
Nail in blaze in locust tree (3 inches diameter).....	56	04	00	10.39 meters.
Chimney of fishing shack on Swan Point....	71	17	..	½ mile.
"Seven Foot Knoll Light".....	88	14	40	7½ miles.
West gable of Strong barn.....	153	39	..	¾ mile.
Southwest corner of Strong house.....	174	09	..	¾ mile.
Chimney of tenant house.....	212	55	..	¾ mile.
North gable of barn.....	250	47	..	1¾ miles.
Thompson windmill.....	271	47	..	½ mile.
West gable of Rockhall Wharf house.....	274	08	..	¾ mile.
North gable of Downey house.....	278	49	..	½ mile.
Nail in blaze in locust tree (4 inches diameter).....	292	56	20	10.32 meters.
South one of twin trees on Little Neck Island.....	352	59	..	¼ mile.

TAVERN.

General locality.—Eastern shore of Chesapeake Bay on western side of Tavern Creek about three-eighths mile north of entrance to creek, 1 mile northeast of Swan Point and one-half mile northwest of Rockhall Landing. (See Chart No. 28.)

Immediate locality.—Observed station is in the eastern side of peach and apple orchard about 1 foot above high water, 152 yards northwest of shore, 165 yards west of shore, 8 yards west of edge of sage land, 15 yards west of a wire fence, 18 yards south of another wire fence, 52 yards north of still another wire fence, and 125 yards east of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Orchard" (S 50° 31' E).....	0	00	00	¾ mile.
Gilt ball on lightning rod near left end of house.....	1	38	..	½ mile.
Apple tree (18 inches diameter).....	63	21	..	49 yards.
Nail in blaze in apple tree (20 inches diameter).....	83	59	00	35.02 meters.
Nail in blaze in apple tree (24 inches diameter).....	117	21	50	14.99 meters.
Nail in blaze in peach tree (5 inches diameter).....	166	42	20	10.39 meters.
Nail in blaze in apple tree (18 inches diameter).....	203	53	30	19.49 meters.
Center of chimney at right end of roof of house with ell.....	276	08	..	1¼ miles.

CORR.

General locality.—Eastern shore of Swan Creek about 1¼ miles north of Rockhall Landing. (See Chart No. 28.)

Immediate locality.—Observed station is about 1 foot above high water, 6 yards northeast of rounded point of shore, 13 yards northwest of square cut in shore, 13 yards southeast of point where wire fence meets shore, and 50 and 65 yards south by west of two large trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Spike" (S 0° 49' W).....	0	00	00	¼ mile.
Chimney of house.....	14	58	..	1½ miles.
Chimney of old house.....	35	50	..	¾ mile.
Right chimney of Strong house.....	48	12	..	1 mile.
Near peak of house between two barns.....	99	35	..	¾ mile.
Large square chimney of large brick house.....	142	52	..	½ mile.
North chimney of brick house.....	204	34	..	150 yards.
East chimney of large house.....	245	41	..	¾ mile.
Chimney of old house.....	311	05	..	¼ mile.

URIE.

General locality.—Western shore of Swan Creek about 1 mile north of Rockhall Landing. (See Chart No. 28.)

Immediate locality.—Observed station is on a slight projection of the shore about 1 foot above high water and 4 yards west of shore. Cement monument marking reference station is 4.76 meters S 21° 35' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 1 inch above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface mark. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Corr" (N 79° 13' E)	0	00	00	¼ mile.
Near peak of barn near several buildings....	27	24	..	¼ mile.
Chimney of large house.....	54	05	..	1 mile.
Near peak of large house.....	75	58	..	1½ miles.
Gilt ball on weather vane.....	89	12	..	1¼ miles.
REFERENCE STATION.....	124	21	45	4.76 meters.
Nail in blaze in black thorn tree (6 inches diameter).....	124	34	40	5.37 meters.
Nail in blaze in black thorn tree (6 inches diameter).....	134	40	30	4.84 meters.
Nail in blaze in water bush (3 inches diameter).....	200	26	10	3.69 meters.
Nail in blaze in water bush (4 inches diameter).....	257	42	40	10.82 meters.
Near peak of barn.....	277	15	..	¼ mile.
West large chimney on west end of large brick house.....	340	24	..	1 mile.
Left chimney of Corr house.....	347	10	..	¼ mile.

SPIKE.

General locality.—Eastern shore of Swan Creek, about seven-eighths mile north-northeast of Rockhall Landing. (See Chart No. 28.)

Immediate locality.—Observed station is among trees and bushes about 2 feet above high water, 30 yards east of shore, and 1 yard west of edge of cultivated field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Rail" (S 23° 07' E).....	0	00	00	¼ mile.
Nail in blaze in locust tree (3 inches diameter).....	13	11	40	5.02 meters.
Nail in blaze in locust tree (5 inches diameter).....	28	22	10	6.11 meters.
Windmill at Gratitude.....	42	29	..	1 mile.
Chimney of old house.....	76	04	..	½ mile.
Chimney on main part of Strong house.....	83	52	..	1 mile.
Nail in blaze in locust tree (4 inches diameter).....	133	31	10	3.61 meters.
Right peak of right-hand barn.....	143	51	..	¾ mile.
Large square chimney of large brick house..	179	19	..	¾ mile.
North chimney of brick house.....	209	32	..	¾ mile.
North peak of old barn.....	271	06	..	¾ mile.

ELLIASON.

General locality.—Western shore of Swan Creek on a point of land at north side of entrance to a small cove about three-fourths mile north of Rockhall Landing. (See Chart No. 28.)

Immediate locality.—Observed station is about 2 feet above high water, 16 yards west by north of shore, 23 yards north-northwest of shore, 30 yards northeast of shore, and 33 yards north by east of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Corr" (N 33° 57' E).....	0	00	00	¾ mile.
Large chimney of 2½-story house.....	9	08	..	1¾ miles.
West peak of barn.....	40	53	..	½ mile.
South chimney of house.....	60	58	..	¾ mile.
Right chimney of house.....	98	12	..	1¼ miles.
Main chimney of house on Rockhall Road..	106	56	..	1¼ miles.
Large house on Rockhall Road.....	114	04	..	1¼ miles.
Windmill at Gratitude.....	152	43	..	¾ mile.
Gilt ball on lightning rod.....	155	34	30	¾ mile.
Weather vane on Rockhall Wharf house....	160	53	40	1 mile.
East chimney of Strong house.....	202	52	..	¾ mile.
Near peak of very large brick house.....	320	02	..	¾ mile.
South chimney of large house.....	359	14	..	½ mile.

RAIL.

General locality.—Eastern shore of Swan Creek about three-fourths mile northeast of Rockhall Landing. (See Chart No. 28.)

Immediate locality.—Observed station is on a low point about 2 feet above high water, 3 yards back from shore, and west of a number of small locust trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Fork" (S 72° 56' W).....	0	00	00	1/4 mile.
Chimney of tenant house.....	12	01	..	1/2 mile.
South gable of Henson barn.....	56	36	..	5/8 mile.
South gable of cornerib	86	18	..	1 mile.
South gable of Swatska house.....	143	41	..	3/8 mile.
Nail in blaze in locust tree (4 inches diam- eter).....	161	38	00	9.94 meters.
Nail in blaze in locust tree (3 inches diam- eter).....	192	52	50	14.96 meters.
Nail in blaze in locust tree (3 inches diam- eter).....	235	52	40	19.24 meters.
North chimney of house.....	255	16	..	3/4 mile.
Highest chimney of house.....	268	50	..	1 mile.
East chimney of Frank Ayers's house.....	288	15	..	3/4 mile.
East chimney of Georgia Ayers's house.....	306	20	..	1/2 mile.
Chimney of Sullivan house.....	310	34	..	1/2 mile.
Thompson windmill.....	322	09	20	3/4 mile.
North chimney of Burgess house.....	327	18	..	5/8 mile.
Chimney of fishing shack.....	339	26	..	5/8 mile.

FORK.

General locality.—Western shore of Swan Creek, about one-half mile north-northeast of Rockhall Landing and three-eighths mile northwest of entrance to The Haven. (See Chart No. 28.)

Immediate locality.—Observed station is on marsh land about 2 feet above high water, 25 yards inshore, and 200 yards from extreme south end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Treasure" (S 24° 29' E).....	0	00	00	3/4 mile.
East chimney of Georgia Ayers's house.....	14	30	..	3/8 mile.
Chimney of Sullivan house.....	32	14	..	3/4 mile.
Chimney of house.....	52	07	..	1/2 mile.
East chimney of Strong house.....	105	55	..	5/8 mile.
Chimney of Elliason house.....	119	42	..	1/4 mile.
Nail in blaze in locust tree (3 inches diam- eter).....	234	20	10	11.15 meters.
Chimney of Swatska tenant house.....	252	52	..	5/8 mile.
North chimney of Biglow house.....	279	57	..	7/8 mile.
North chimney of house.....	322	06	..	5/8 mile.
Rockhall M. E. Church Spire.....	334	41	50	1 1/2 miles.
Highest chimney of house.....	350	35	..	1 mile.
East chimney of Frank Ayers's house.....	359	25	..	3/4 mile.

HAVEN.

General locality.—Eastern shore of Swan Creek at northern side of entrance to The Haven about five-eighths mile east-northeast of Rockhall Landing. (See Charts Nos. 28 and 29.)

Immediate locality.—Observed station is on a long marsh point about 2 feet above high water, 5 yards back from high-water mark, and 7 yards west and 8 yards north of large pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Fork" (N 57° 38' W).....	0	00	00	¾ mile.
Nail in blaze in oak tree (15 inches diameter).....	21	28	50	9.82 meters.
South gable of corncrib.....	36	46		1¼ miles.
Nail in blaze in pine tree (18 inches diameter).....	108	47	10	6.69 meters.
North chimney of Shamokin house.....	136	18		¾ mile.
North chimney of house.....	166	44		¼ mile.
Nail in blaze in pine tree (18 inches diameter).....	175	43	50	7.20 meters.
North gable of house.....	215	44		¾ mile.
Thompson windmill.....	299	28	40	¾ mile.
South chimney of Burgess house.....	301	29		¾ mile.
Chimney of tenant house.....	348	59		¾ mile.

TREASURE.

General locality.—Eastern and southern shore of Swan Creek on a point at western side of entrance to The Haven, about one-half mile east-northeast of Rockhall Landing. (See Charts Nos. 28 and 29.)

Immediate locality.—Observed station is on a marsh point below high water, about 25 yards inshore, and 300 yards northeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Orchard" (S 85° 00' W).....	0	00	00	¾ mile.
West gable of Strong barn.....	17	23		1 mile.
South gable of barn.....	60	52		¾ mile.
South gable of barn.....	108	18		¾ mile.
Lone pine tree on opposite shore.....	155	48		¼ mile.
West gable of barn.....	183	38		½ mile.
Rockhall M. E. Church Spire.....	218	35	10	1¼ miles.
North gable of house.....	230	15		¾ mile.
West gable of house.....	235	56		1 mile.
East pine tree of group.....	243	57		¼ mile.
East chimney of Ayers's house.....	311	19		300 yards.
East gable of small barn.....	338	07		¾ mile.
Nail in blaze in dead locust tree (8 inches diameter).....	344	28	20	37.98 meters.
Nail in blaze in dead locust tree (8 inches diameter).....	353	04	40	36.32 meters.

ORCHARD.

General locality.—Eastern and southern shore of Swan Creek on point of land about one-eighth mile north of Rockhall Landing. (See Charts Nos. 28 and 29.)

Immediate locality.—Observed station is on a sand and grass point about 3 feet above high water, 7 yards west of peach orchard, 6 yards east of shore, 33 yards west-southwest of shore, 31 yards south of extreme end of point, 23 yards north of a wire fence, and 53 yards north of a house. Cement monument marking reference station is 9.67 meters N 83° 04' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface mark. Reference station is center point of triangle on standard cement monument projecting 2 inches above surface of ground.

References.—	°	'	"	
"Bank" (S 78° 45' W).....	0	00	00	¾ mile.
East chimney of house.....	42	23	..	½ mile.
South peak between two chimneys of large house.....	105	51	20	1 ⅜ miles.
Chimney of an old long building.....	144	20	..	1 mile.
Nail in blaze in locust tree (7 inches diameter).....	176	02	30	21.85 meters.
REFERENCE STATION.....	184	19	20	9.67 meters.
Nail in blaze in peach tree (5 inches diameter).....	226	56	40	8.07 meters.
Right corner of 1½-story building.....	229	59	20	32.57 meters.
Northwest corner of house.....	267	21	10	53 yards.
Nail in blaze in tree (13 inches diameter)....	274	07	20	21.60 meters.
West peak of 2-story wharf house.....	294	56	40	¾ mile.
Chimney of house on Swan Point.....	360	00	..	1 mile.

GRATITUDE.

General locality.—Eastern shore of Chesapeake Bay at eastern side of entrance to Swan Creek, opposite middle of Little Neck Island, and near old Rockhall Wharf. (See Charts Nos. 28 and 29.)

Immediate locality.—Observed station is on a marsh meadow about 1 foot above high water, 12 yards east of shore, 150 yards southwest of a house, and 400 yards south-southwest of Rockhall Landing.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—	°	'	"	
"Love Point Light" (S 11° 46' W).....	0	00	00	5 ⅞ miles.
"Sandy Point Light".....	26	05	10	10 ¾ miles.
"Baltimore Light".....	41	21	20	9 ⅜ miles.
Chimney of fishing shack on Swan Point....	90	47	..	1 mile.
Left tangent of piles of old Rockhall Wharf..	124	15	..	200 yards
West gable of Strong barn.....	130	49	..	¾ mile.
Chimney of tallest wharf house at Rockhall Landing.....	162	15	..	¼ mile.
Chimney of house.....	166	19	..	1 mile.
Post on northwest corner of Downey porch..	196	57	..	150 yards.
Nail in blaze in cedar tree (10 inches diameter).....	273	02	40	107 yards.
North gable of old barn.....	276	36	..	200 yards.
North gable of barn.....	309	21	..	1 ⅝ miles.

WINDMILL POINT.

General locality.—Eastern shore of Chesapeake Bay on Windmill Point at northern side of entrance to Rockhall Harbor. (See Chart No. 29.)

Immediate locality.—Observed station is on low marsh land about level with high water, about 30 yards back from end of point, and 20 yards south of a group of large pine trees. Cement monument marking reference station is 24.13 meters N 20° 14' E of observed station.

Marks.—Observed station is center point of 2-inch tile pipe filled with sand with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Love Point Light" (S 17° 47').....	0	00	00	5½ miles.
Nail in blaze in pine tree (18 inches diameter).....	146	39	30	17.33 meters.
Nail in blaze in pine tree (24 inches diameter).....	178	03	00	23.57 meters.
REFERENCE STATION.....	182	27	00	24.13 meters.
Nail in blaze in pine tree (20 inches diameter).....	216	10	20	16.52 meters.
Rockhall M. E. Church Spire.....	238	05	40	1 mile.
Highest gable on Sharps Wharf.....	246	42	..	¾ mile.
East chimney of house.....	271	27	..	½ mile.
Chimney of small house.....	287	55	..	½ mile.
West chimney of small house.....	311	04	..	1 mile.

STEVENS.

General locality.—Eastern shore of Chesapeake Bay about one-fourth mile south of Huntingfield Point at entrance to Huntingfield Creek. (See Chart No. 29.)

Immediate locality.—Observed station is in a cultivated field about 15 feet above high water, 55 yards back from edge of vertical bank 3 feet higher than station, and 450 yards south of the extreme end of Huntingfield Point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (S 25° 03' W).....	0	00	00	4¾ miles.
Right tangent of Love Point.....	12	13	..	6½ miles.
Southeast corner of fishing shack on Swan Point.....	111	24	..	2½ miles.
East gable of Strong barn.....	125	42	..	2½ miles.
Thompson windmill.....	135	01	20	2 miles.
Chimney of house.....	150	32	..	1¼ miles.
Nail in blaze in cedar tree (10 inches diameter).....	155	24	20	200 yards.
Wicks windmill.....	223	16	20	1 mile.
Nail in blaze in locust tree (18 inches diameter).....	227	23	00	110 yards.
Chimney of small house.....	239	58	..	1 mile.
Nail in blaze in persimmon tree (10 inches diameter).....	275	26	20	130 yards.
Chimney of Stevens tenant house.....	320	39	..	½ mile.

BALTIMORE LIGHT.

General locality.—Western side of Chesapeake Bay offshore about 1½ miles east of mouth of Magothy River and one-eighth mile west of entrance to dredged channel leading to Baltimore. (See progress map.)

Immediate locality.—Observed station is on brick octagonal dwelling on cylindrical foundation known as Baltimore Lighthouse.

Marks.—Observed station is center point of lantern on Baltimore Lighthouse.

References.—None necessary.

SANDY POINT LIGHT.

General locality.—Western side of Chesapeake Bay offshore about one-half mile east of Sandy Point. (See Chart No. 29 and progress map.)

Immediate locality.—Observed station is on brick dwelling on cylindrical foundation known as Sandy Point Lighthouse.

Marks.—Observed station is center point of lantern on Sandy Point Lighthouse.

References.—

"Bodkin Point (old tower)" (N 14° 35' W)..... 8½ miles.

RING.

General locality.—Eastern shore of Chesapeake Bay on western side of Kent Island about 2¼ miles south-southwest of Love Point and 3¾ miles east of Sandy Point. (See Chart No. 29.)

Immediate locality.—Observed station is in a cultivated field about 20 feet above high water, 12 yards inshore, and 2 yards from edge of bank. Cement monument marking reference station is 9.36 meters N 79° 21' E of observed station.

Marks.—Observed station is center of 4-inch tile pipe with top 3 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Sandy Point Light" (N 84° 56' W).....	0	00	00	3¾ miles.
Cupalo on barn.....	117	51	..	1 mile.
South chimney of house.....	141	00	..	¼ mile.
REFERENCE STATION.....	164	17	10	9.36 meters.
Lone tree (2 inches diameter).....	224	10	..	300 yards.
South chimney of house.....	238	56	..	300 yards.

LOVE POINT LIGHT.

General locality.—Eastern side of Chesapeake Bay at entrance to Chester River offshore about 1½ miles northeast of Love Point. (See Chart No. 29.)

Immediate locality.—Observed station is on hexagonal screw-pile structure known as Love Point Lighthouse.

Marks.—Observed station is center point of lantern on Love Point Lighthouse.

References.—

"Wickes Beach" (S 47° 55' E)..... 3¼ miles.

AMOUR.

General locality.—Northern end of Kent Island at western side of entrance to Chester River, about one-fourth mile southeast of Love Point and three-eighths mile north of Love Point Landing. (See Chart No. 29.)

Immediate locality.—Observed station is on sand and marsh point, about 2 feet above high water, 25 yards inshore, and 55 yards north of fishing shack.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (N 33° 42' E).....	0	00	00	1½ miles.
Left chimney of house.....	28	28	..	4¾ miles.
West gable of house on East Neck.....	48	00	..	3¾ miles.
North gable of barn.....	54	30	..	3¼ miles.
North gable of house on Cedar Point.....	76	30	..	5 miles.
Gable of barn.....	128	18	..	4¾ miles.
Left tangent of Kent Island Landing.....	132	59	..	1¾ miles.
Northeast corner of fishing shack.....	140	38	..	57 yards.
Nail in blaze in cedar tree (3 inches diameter).....	174	43	..	12.46 meters.
"Railway Water Tank".....	199	53	50	¾ mile.
Nail in blaze in cedar tree (4 inches diameter).....	206	10	..	11.30 meters.
Nail in blaze in cedar tree (6 inches diameter).....	295	02	..	38.88 meters.

RAILWAY WATER TANK.

General locality.—Northern end of Kent Island, about half-way between Chesapeake Bay and Chester River and three-fourths mile south by west of Love Point. (See Chart No. 29.)

Immediate locality.—Observed station is on the only large elevated water tank located just north of the center of the bend of the railway that leaves Love Point Landing.

Marks.—Observed station is center point of top of water tank.

References.—None necessary.

WICKES BEACH.

General locality.—Eastern shore of mouth of Chester River on western side of East Neck Island near Wickes Beach. (See Chart No. 29.)

Immediate locality.—Observed station is on a narrow sand beach about on level with high water, 10 yards back from low water, and 2 yards west of swamp which extends back to woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	0	1	2	
"Love Point Light" (N 47° 54' W)	0	00	00	3 miles.
Nail in blaze in oak tree (15 inches diameter)	60	45	40	300 yards.
Nail in blaze in gum tree (12 inches diameter)	70	59	00	250 yards.
Nail in blaze in oak tree (15 inches diameter)	114	05	50	200 yards.
North cupola of barn	155	15	..	5/8 mile.
Lone tree on Cedar Point	178	23	..	1 1/8 miles.
East gable of barn	200	21	..	4 miles.
North gable of Jackson Wharf house	214	26	..	4 1/8 miles.
North gable of barn	276	32	..	3 3/8 miles.
Cupola on farmhouse	299	16	..	3 1/8 miles.
"Railway Water Tank"	321	45	00	3 5/8 miles.
North flagstaff on Love Point Hotel	323	27	..	3 3/8 miles.

NARROWS POINT.

General locality.—Northern shore of Chester River on southwest end of East Neck Island, about one-eighth mile north of Cockeys Island and three-eighths mile west-northwest of Cedar Point. (See Charts Nos. 29 and 30.)

Immediate locality.—Observed station is on a low marshy point about level with high water, about 7 yards from low water, and 325 yards west of a fishing shack. Cement monument marking reference station is 12.28 meters N 7° 58' E of observed station.

Marks.—Observed station is center of 3-inch tile pipe filled with cement with top 4 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Wickes Beach" (N 46° 58' W).....	0	00	00	1½ miles.
REFERENCE STATION.....	64	56	10	12. 28 meters.
Chimney of fishing shack.....	133	08		325 yards.
West gable of Queenstown elevator.....	153	44		3¼ miles.
Cupola on barn.....	164	05		2½ miles.
North gable of house.....	180	51		2½ miles.
North gable of barn.....	194	53		2½ miles.
Cupola on barn.....	216	26		2½ miles.
North gable of house.....	228	16		2¾ miles.
North gable of house on Jackson Creek.....	231	47		2½ miles.
East gable of Jackson Wharf house.....	233	52		2¾ miles.
North gable of barn.....	254	28		3 miles.
West chimney of house.....	285	16		3¾ miles.
Chimney of house near Macum Creek.....	293	36		4½ miles.
East chimney of house.....	318	01		4¾ miles.
"Railway Water Tank".....	334	11	40	5¼ miles.
South flagstaff on Love Point Hotel.....	335	26		5½ miles.
Flagstaff on Love Point Wharf.....	335	42		4¾ miles.
Right tangent of Love Point.....	341	30		5 miles.

MACUM.

General locality.—Southern shore of Chester River on Kent Island, about 4½ miles south of Love Point Light, 3 miles south-southeast of Love Point Landing, and one-half mile north-northwest of Macum Creek. (See Chart No. 29.)

Immediate locality.—Observed station is in cultivated field, about 7 feet above high water, 25 yards inshore, and 16 yards south of two cedar trees at edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (N 0° 19' E).....	0	00	00	4½ miles.
North cupola of barn on East Neck Island..	50	41		3¾ miles.
Chimney of house on East Neck Island....	52	13		3¾ miles.
Nail in blaze in persimmon tree (6 inches diameter).....	57	02	50	22. 24 meters.
South corner of fishing shack on Cedar Point.	72	08		4 miles.
West gable of large barn.....	89	48		5 miles.
Cupola on small house.....	97	00		5 miles.
West gable of house.....	102	15		4½ miles.
Cupola on barn.....	108	20		3 miles.
Gable of house near Jackson Creek.....	119	26		3½ miles.
East chimney of brick house.....	195	59		1¼ mile.
East chimney of house.....	212	31		1 mile.
Cupola on house.....	221	52		1¾ miles.
East chimney of house.....	225	18		¾ mile.
North chimney of house.....	257	16		400 yards.
Lone cedar tree.....	266	08		500 yards.
Nail in blaze in cedar tree (4 inches diameter).....	314	14	30	30. 98 meters.
"Railway Water Tank".....	333	17	20	3½ miles.
East gable of wharf house on Kent Island Landing.....	339	28		1½ miles.
Flagstaff on wharf house on Love Point Landing.....	342	03		3¼ miles.
Chimney of fishing shack.....	343	11		3¼ miles.

THIN.

General locality.—Southern shore of Chester River on western side of entrance to Kent Narrows, about three-fourths mile north of Narrows railway station. (See Chart No. 29.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 55 yards north of shore, and 55 yards west of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Muddy" (N 37° 55' E).....	0	00	00	7½ mile.
Smoke pipe on shanty.....	75	13	..	1 mile.
Large low telegraph pole.....	99	27	..	¾ mile.
Smoke pipe on slant-roofed shanty.....	107	58	..	¾ mile.
Near corner of fishing shanty.....	196	21	..	¼ mile.
Tangent of Long Point.....	356	41	..	¾ mile.

MUDDY.

General locality.—Southern shore of Chester River on Long Point, between Muddy Creek and Jackson Creek, about 2¼ miles southwest of Cedar Point and 3½ miles west of Queenstown. (See Charts Nos. 29 and 30.)

Immediate locality.—Observed station is on marsh land covered with myrtle bushes, about 2 feet above high water, 7 yards inshore, 25 yards southwest of extreme end of point, and 70 yards north of group of pine trees.

Marks.—Observed station is center point of triangle, on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (N 28° 41' W)	0	00	00	6 miles.
East chimney of house.....	34	54	..	2¾ miles.
Lone pine tree on Cedar Point.....	53	36	..	2¼ miles.
South gable of barn.....	79	35	..	4½ miles.
Cupola on barn.....	103	11	..	3 miles.
Cupola on barn.....	114	53	..	2¼ miles.
West gable of barn.....	134	33	..	1¾ miles.
Chimney of house.....	146	39	..	1¼ miles.
North gable of wharf house on Jackson Creek				
Landing.....	179	21	..	1 mile.
North gable of house.....	182	10	..	1¼ miles.
Chimney of small house.....	202	56	..	¾ mile.
Nail in blaze in pine tree (8 inches diameter).....	221	12	50	63 yards.
Nail in blaze in pine tree (12 inches diameter).....	243	25	..	67 yards.
South flagstaff of Love Point Hotel.....	339	43	30	5½ miles.
North gable of wharf house on Love Point				
Landing.....	341	46	..	5¼ miles.
Right tangent of Love Point.....	345	12	..	5½ miles.

BRIDGE.

General locality.—Southern side of Chester River on western shore of Kent Narrows, about one-eighth mile west of Narrows railway station. (See Chart No. 29.)

Immediate locality.—Observed station is on a telegraph pole at a point about 25 feet above high water, 4 yards south of near rail of railroad, 8 yards west of end of railroad bridge, and 7 yards from tie line of bridge.

Marks.—Observed station is a small staff nailed to telegraph pole.

References.—None necessary.

RAILROAD.

General locality.—Southern side of Chester River on eastern shore of Kent Narrows, about three-eighths mile east-southeast of Narrows railway station and one-eighth mile south of railroad. (See Chart No. 29.)

Immediate locality.—Observed station is on cultivated land about 8 feet above high water, 35 yards south by west of telephone line on north side of county road, 75 yards east of shanty, and 80 yards north-east of shore of small cove.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Marshy" (S 2° 38' E).....	0	00	00	¾ mile.
Cupola on barn.....	20	36	..	2¼ miles.
Chimney on ell of large house.....	38	04	..	2¾ miles.
Right tangent of shanty.....	96	32	..	75 yards.
South peak of Fisherman Inn.....	118	01	..	¾ mile.
Nail in blaze in tree (8 inches diameter)....	139	44	10	38.07 meters.
Nail in blaze in cherry tree (14 inches di- ameter).....	163	29	40	27.09 meters.
Nail in blaze in telephone pole No. 2848....	197	15	20	30.33 meters.
Smokepipe of shanty.....	209	50	..	100 yards.
Near peak of ell-shaped house.....	269	00	..	1¾ miles.
Near peak of house.....	292	19	..	1¾ miles.
Left peak of barn.....	345	37	..	1½ miles.
House in trees.....	354	10	..	1½ miles.

BLUEBEARD.

General locality.—Eastern shore of Chester River on point at entrance to a small creek, about five-eighths mile northeast of Blunt Creek and 1 mile southwest of entrance to Queenstown Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a low sand beach about 1 foot above high water, 5 yards inshore, 2 yards east of small persimmon tree, 55 yards northeast of a small stream, and 200 yards north-northeast of a pond.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (N 47° 53' W).....	0	00	00	7 miles.
South gable of house.....	12	03	..	2¾ miles.
Right tangent of piles of Bogle Wharf.....	29	48	..	3¾ miles.
Largest of four pine trees on Piney Point...	48	58	..	4 miles.
East chimney of house.....	70	23	..	2¾ miles.
Black beacon at entrance to Queenstown Creek.....	90	23	40	1 mile.
Nail in blaze in swamp-oak tree (4 inches di- ameter).....	122	01	10	10.60 meters.
Nail in blaze in chestnut tree (18 inches di- ameter).....	197	34	10	150 yards.
Nail in blaze in oak tree (6 inches diameter) .	270	04	20	125 yards.
Cupola of barn.....	278	50	..	1½ miles.
East chimney of house.....	279	24	..	1½ miles.
North gable of Jackson Creek Landing house.....	290	11	..	2¾ miles.
East gable of house.....	329	17	..	5¼ miles.
Gable of Love Point wharf house.....	344	08	..	6¾ miles.
Right tangent of Love Point.....	347	46	..	7 miles.

BLAKEFORD.

General locality.—Eastern shore of Chester River, about three-eighths mile north of Blakeford Point, at entrance to Queenstown Creek. (See Chart No. 30.)

Immediate locality.—Observed station is about 15 feet above high water, 8 yards inshore, 2 yards back from top of bank with uniform slope to beach, 25 yards north of gully, and 25 yards south of large sycamore tree at foot of slope.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Rain" (N 74° 56' W).....	0	00	00	17½ miles.
Right tangent of piles of Bogle Wharf.....	27	33	..	3 miles.
Nail in blaze in cedar tree (4 inches diameter).....	83	12	10	13.31 meters.
Northwest corner of house in woods.....	155	39	..	300 yards.
West gable of small house.....	174	19	..	¾ mile.
West gable of large barn.....	215	41	..	¾ mile.
West gable of house.....	235	20	..	¾ mile.
Northeast corner of elevator at Queenstown.....	239	21	..	¾ mile.
Nail in blaze in ash tree (15 inches diameter).....	247	00	20	21.30 meters.
First black beacon at entrance to Queenstown Creek.....	294	40	..	½ mile.
Chimney of fishing shack on Cedar Point...	352	26	..	2½ miles.

RAIN.

General locality.—Western shore of Chester River on Hail Point, about 1½ miles south-southeast of Bogle Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is about 5 feet above high water, 3 yards north of shore, and 20 yards northwest of extreme end of point. Cement monument marking reference station is 29.84 meters N 65° 20' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle, on standard cement monument projecting 3 inches above surface of ground. Subsurface mark of reference station is center of 2-inch tile pipe with top 2 inches below base of monument.

References.—

	°	'	"	
"Bluebeard" (S 21° 17' E).....	0	00	00	17½ miles.
Chimney of house.....	11	07	..	2¾ miles.
Cupola on barn.....	33	55	..	2½ miles.
Chimney of house on Jackson Creek.....	45	07	..	3¾ miles.
Chimney of small house.....	48	32	..	3½ miles.
Chimney of fishing shack.....	101	34	..	¾ mile.
Nail in blaze in pine tree (10 inches diameter).....	119	46	30	15.45 meters.
REFERENCE STATION.....	135	56	20	29.84 meters.
Nail in blaze in pine tree (10 inches diameter).....	147	05	50	18.09 meters.
South gable of house.....	173	28	..	1½ miles.
Right tangent of piles of Bogle Wharf.....	186	59	..	1½ miles.
Williams water tank.....	255	59	..	2 miles.
Black beacon at entrance to Queenstown Creek.....	318	01	..	1¼ miles.
Cupola on barn.....	338	50	..	1¾ miles.

BREAK.

General locality.—Eastern shore of Chester River on Break Point about one-eighth mile north of north side of entrance to Tilghmans Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 5 feet above high water, 13 yards inshore, 4 yards from edge of bank, 200 yards north of extreme end of point, and 300 yards west of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	0	1	2	
"Blakeford" (S 23° 21' E).....	0	00	00	1½ miles.
North chimney of house at Queenstown....	6	55	..	2½ miles.
Chimney of house.....	37	48	..	3¾ miles.
Cupola on barn near Jackson Creek Landing	49	05	..	4½ miles.
Chimney of small house.....	55	05	..	4½ miles.
Chimney of small house.....	58	35	..	5½ miles.
Chimney of Greens fishing shack.....	84	38	..	1½ miles.
South chimney of house.....	103	42	..	2¾ miles.
East gable of house.....	131	23	..	2¾ miles.
Right tangent of piles of Bogle Wharf.....	133	30	..	1¾ miles.
East chimney of house.....	151	35	..	2½ miles.
East chimney of house.....	176	46	..	3¾ miles.
Williams water tank.....	200	58	..	¼ mile.
Knob on door of fishing shack.....	349	58	..	¼ mile.

OVERTON.

General locality.—Western shore of Chester River on north side of entrance to Durdin Creek and about 100 yards south of Bogle Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 4 yards inshore, 100 yards south of Bogle Wharf, 250 yards southeast of Bogle store, and 300 yards west of Bogle Wharf house. Cement monument marking reference station is 11.26 meters S 73° 06' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	0	1	2	
"Bay Bush Point" (N 3° 13' W).....	0	00	00	1¾ miles.
South gable of barn.....	4	12	..	2¾ miles.
South gable of barn.....	17	21	..	3 miles.
West gable of barn.....	39	13	..	5 miles.
Left tangent of piles of Bogle Wharf.....	73	17	..	300 yards.
Chimney of house.....	119	25	..	2½ miles.
Lower west gable of Queenstown elevator....	138	21	..	3½ miles.
North gable of house.....	140	27	..	3¾ miles.
Right tangent of woods on Hail Point.....	168	59	..	1¾ miles.
REFERENCE STATION.....	256	18	40	11.26 meters.
Chimney of Bogle's store.....	289	17	..	250 yards.

FIR.

General locality.—Eastern shore of Chester River on Piney Point about 1½ miles north-northwest of Break Point and one-half mile west of Piney Cove. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land at the extreme end of Piney Point, about on level with high water, and about 4 yards east of shore. Cement monument marking reference station is 10.45 meters S 70° 43' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe with top flush with surface of ground. Sub-surface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Break" (S 21° 04' E).....	0	00	00	1½ miles.
East chimney of house at Queenstown.....	2	36	..	4 miles.
Chimney of house.....	24	17	..	4½ miles.
Gable of barn near Jackson Creek Landing..	34	49	..	5½ miles.
North gable of house.....	35	17	..	5½ miles.
Chimney of fishing shack.....	51	41	..	2¾ miles.
Right tangent of piles of Bogle Wharf.....	71	41	..	1¾ miles.
Chimney of house.....	77	08	..	1½ miles.
South chimney of house.....	135	34	..	1½ miles.
North chimney of house.....	170	54	..	2¼ miles.
West chimney of house.....	178	00	..	3 miles.
West gable of barn.....	199	30	..	3½ miles.
Left tangent of woods.....	226	37	..	¾ mile.
REFERENCE STATION.....	310	21	10	10.45 meters.
Williams water tank.....	339	41	..	1¼ miles.

BAY BUSH POINT.

General locality.—Western shore of Chester River on a point about one-fourth mile north of entrance to Fryingpan Cove and Churn Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 15 yards inshore, and in front of several persimmon trees. Cement monument marking reference station is 10.16 meters N 80° 13' W of observed station.

Marks.—Observed station is nail in 3-inch cement filled tile pipe with top 6 inches below surface of ground incased in cement cake bearing the legend "U. S. C. S.—1896." Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Fir" (S 57° 56' E).....	0	00	00	1½ miles.
Williams water tank.....	8	22	..	2½ miles.
Chimney of house at Queenstown.....	27	17	..	5½ miles.
West gable of barn.....	35	42	..	4½ miles.
Left tangent of woods on Hail Point.....	45	58	..	3¼ miles.
Left tangent of piles of Bogle Wharf.....	48	21	..	1¼ miles.
Chimney of Bogle store.....	58	00	..	1½ miles.
Nail in blaze in persimmon tree (6 inches diameter).....	69	04	00	6.25 meters.
REFERENCE STATION.....	157	43	00	10.16 meters.
Nail in blaze in persimmon tree (8 inches diameter).....	220	45	00	6.20 meters.
West chimney of house.....	244	04	..	1¼ miles.
East gable of barn.....	262	10	..	3 miles.
West gable of barn.....	297	51	..	4½ miles.
West gable of barn.....	316	19	..	3 miles.

GORDON.

General locality.—Eastern side of Chester River about 55 yards off shore, three-fourths mile southwest of entrance to Reeds Creek and seven-eighths mile north-northeast of Piney Point. (See Chart No. 30.)

Immediate locality.—Observed station is in about 3 feet of water at high tide, 55 yards off shore, and 300 yards southwest of end of woods and cultivated field. Cement monument marking reference station is 57.49 meters S 71° 15' E of observed station.

Marks.—Observed station is nail in 2-inch by 4-inch pine stub driven with top to high water. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

<i>References.</i> —	°	'	"	
"Fir" (S 25° 18' W).....	0	00	00	¾ mile.
Left tangent of piles of Bogle Wharf.....	15	23	..	2 ½ miles.
East gable of barn.....	42	41	..	2 miles.
South chimney of house.....	103	30	..	2 miles.
West chimney of Harris house.....	118	39	..	2 ¾ miles.
South gable of Strong tenant house.....	129	39	..	3 miles.
South chimney of house.....	145	25	..	3 miles.
Spindle on Brown house.....	167	02	..	3 ½ miles.
South gable of corn crib.....	197	36	..	3 miles.
Nail in blaze in pine tree (10 inches diameter).....	252	39	30	57.93 meters.
REFERENCE STATION.....	263	26	40	57.49 meters.
Nail in blaze in pine tree (18 inches diameter).....	286	55	40	57.02 meters.

BIRD.

General locality.—Eastern shore of Chester River on Gordon Point at southwest side of entrance to Reeds Creek about 1½ miles southwest of Holton Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a marsh meadow about 2 feet above high water, and 75 yards west of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Crow" (S 14° 23' W).....	0	00	00	¾ mile.
Lone pine tree (12 inches diameter).....	69	59	..	300 yards.
North chimney of house.....	85	13	..	3 ¼ miles.
South gable of barn.....	115	56	..	2 ¾ miles.
Northwest corner of house.....	230	16	..	¾ mile.
North chimney of house.....	300	01	..	1 mile.
North gable of house.....	343	41	..	1 ½ miles.
Windmill.....	358	43	..	½ mile.
Chimney of house.....	359	09	..	¾ mile.

CROW.

General locality.—Eastern side of Chester River on western shore of Reeds Creek about one-half mile south of extreme end of Gordon Point. (See Chart No. 30.)

Immediate locality.—Observed station is in yard of tenant house about 4 feet above high water, 12 yards west of shore, 5 yards south of a pear orchard, and 7 yards north of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Bird" (N 14° 23' E).....	0	00	00	¾ mile.
South gable of house near Cliffs Landing....	3	03	..	3 ¾ miles.
South gable of barn.....	36	18	..	1 ¾ miles.
Cupola of barn.....	73	23	..	1 ½ miles.
Northeast corner of Carnell tenant house....	99	01	30	8.71 meters.
Northwest corner of Carnell tenant house....	128	43	10	6.65 meters.
Northeast corner of barn.....	198	25	20	14.06 meters.
Northwest corner of barn.....	221	37	10	12.68 meters.

GROVE.

General locality.—Eastern side of Chester River on a point between Reeds Creek and Grove Creek about one-half mile southeast of Gordon Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a meadow about 2 feet above high water, 26 yards south of shore, 8 yards west of three persimmon trees, and 35 yards west of a pond.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Reeds" (N 20° 32' E).....	0	00	00	½ mile.
East chimney of house.....	13	06	..	¾ mile.
South gable of barn.....	19	47	..	¾ mile.
Nail in blaze in persimmon tree (6 inches diameter).....	53	05	50	10.98 meters.
Cupola on barn.....	75	58	..	58 mile.
Cupola on Wright barn.....	108	16	..	¾ mile.
North gable of barn.....	168	50	..	58 mile.
East gable of house.....	181	32	..	¾ mile.
South gable of house.....	230	54	..	½ mile.
Lone pine tree on Gordon Point.....	282	13	..	½ mile.
Cupola on barn.....	316	04	..	4 miles.
South chimney of house.....	326	13	..	4 miles.
Nail in blaze in sassafras tree (5 inches diameter).....	338	48	40	10.34 meters.

REEDS.

General locality.—Eastern shore of Chester River at northeast side of entrance to Reeds Creek and about five-eighths mile south of Robins Cove. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 2 feet above high water, 34 yards east of shore, 9 yards north of ditch draining swamp, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bird" (S 62° 26' W).....	0	00	00	½ mile.
East chimney of Harris house.....	60	07	..	3½ miles.
Chimney of house.....	101	57	..	3¼ miles.
East chimney of Brown house.....	112	01	..	3 miles.
Chimney of cabin.....	186	55	..	300 yards.
Cupola on barn.....	276	35	..	1¼ miles.
North gable of house.....	316	12	..	1¾ miles.
Chimney of house.....	337	46	..	¾ mile.

LITTLE GUM.

General locality.—Western shore of Chester River on Little Gum Point at southwest side of entrance to Grays Inn Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 2 yards south of shore; and 12 yards southeast of a 4-foot ditch. Cement monument marking reference station is 40.97 meters N 33° 31' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe with top flush with surface of ground. Subsurface mark is 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Weeks" (N 29° 53' W).....	0	00	00	¾ mile.
East gable of old house on opposite shore....	29	45	..	1 mile.
South chimney of house.....	81	38	..	1 mile.
South gable of house near Cliffs Landing....	93	34	..	¾ miles.
North gable of barn.....	115	23	..	¾ miles.
North gable of barn.....	130	38	..	¾ miles.
South gable of barn.....	170	12	..	¾ miles.
Left tangent of Gum Point.....	212	10	..	¾ mile.
North gable of barn.....	220	28	..	¾ mile.
South chimney of Harris house.....	347	39	..	¾ mile.
REFERENCE STATION.....	356	22	00	40. 97 meters.

WEEKS.

General locality.—Western shore of Grays Inn Creek about three-eighths mile northwest of Chester River, and one-eighth mile southeast of Harris Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in cultivated field about 7 feet above high water, 6 yards west of shore, 5 yards west of vertical bank 5 feet high, 50 yards northeast of low cedar tree at edge of peach orchard, 250 yards north of a wharf, and 200 yards north-northeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Inn" (N 89° 27' E).....	0	00	00	¾ mile.
Left tangent of gable of barn.....	43	07	..	¾ miles.
Chimney of Harris tenant house.....	93	48	..	175 yards.
East gable of Harris house.....	107	38	..	200 yards.
East gable of Harris barn.....	142	45	..	250 yards.
Chimney of Harris tenant house.....	211	50	..	300 yards.
Right tangent of piles of Harris Wharf.....	260	03	..	300 yards.
East gable of Strong tenant house.....	288	59	..	¾ mile.
Chimney of Strong distillery.....	324	46	..	¾ mile.
Lone sycamore tree on opposite shore.....	335	05	..	¾ mile.

SPRING.

General locality.—Western shore of Grays Inn Creek about one-half mile northwest of Chester River, on Spring Point, near Harris Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 8 yards southwest of shore, 10 yards west of a barn, 4 yards southwest of top of slope, and 100 yards southwest of an old wharf.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Island" (N 56° 37' E).....	0	00	00	¾ mile.
Left tangent of piles at northeast corner of old wharf.....	3	12	..	100 yards.
Lone sycamore tree on opposite shore.....	27	58	..	¾ mile.
Nail in northwest corner of Harris barn.....	40	12	30	9. 10 meters.
Lone cedar tree near orchard.....	105	03	..	350 yards.
Nail in post in southwest corner of Harris hay shed.....	143	58	..	20. 69 meters.
Stack of Leary sawmill.....	271	25	20	2 miles.
Nail in blaze in walnut tree (3 inches diameter).....	273	16	10	10. 73 meters.
Chimney of Strong tenant house.....	336	06	..	¾ mile.

LUCY.

General locality.—Western shore of Grays Inn Creek about three-fourths mile northwest of Chester River and one-fourth mile northwest of Harris Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on wooded shore about 5 feet above high water, 5 yards west of shore, 2 yards west of top of vertical bank, and 3 feet north of a stump 4 inches in diameter. Cement monument marking reference station is 11.55 meters $S\ 36^{\circ}\ 59'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Spring" ($S\ 48^{\circ}\ 33'$ E).....	0	00	00	$\frac{1}{4}$ mile.
Nail in blaze in twin chestnut tree (18 inches diameter).....	71	38	10	9.54 meters.
REFERENCE STATION.....	85	32	20	11.55 meters.
Nail in blaze in twin chestnut tree (10 inches diameter).....	111	56	50	8.31 meters.
Stack of Leary sawmill.....	108	51	20	$1\frac{5}{8}$ miles.
East gable of barn.....	210	59	..	2 miles.
Left tangent of piles of Strong old wharf.....	213	34	..	$\frac{3}{4}$ mile.
Southwest corner of Strong house.....	310	53	..	$\frac{3}{4}$ mile.
Nail in blaze in gum tree (15 inches diameter).....	338	07	10	4.73 meters.
Left tangent of piles of Harris old wharf.....	345	48	..	$\frac{1}{4}$ mile.
Northeast corner of Harris barn.....	359	13	..	$\frac{1}{4}$ mile.

GOOSE.

General locality.—Western shore of upper Grays Inn Creek about $1\frac{1}{4}$ miles northwest of Chester River, on point between Browns Cove and Goose Cove. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field at edge of peach orchard about 12 feet above high water, 8 yards southwest of shore, 6 yards southwest of top of vertical bank, and 1 yard north of row of peach trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Prussian" ($N\ 18^{\circ}\ 50'$ W).....	0	00	00	$\frac{1}{4}$ mile.
East gable of house.....	0	49	..	$1\frac{1}{2}$ miles.
West chimney of house.....	31	32	..	$1\frac{1}{4}$ miles.
Nail in blaze in locust tree (6 inches diameter).....	36	09	00	5.32 meters.
West chimney of house.....	37	46	..	1 mile.
Left tangent of piles of old wharf.....	38	51	..	$\frac{3}{8}$ mile.
West chimney of house.....	87	21	..	$\frac{1}{2}$ mile.
North post of Harris hay shed.....	156	55	..	$\frac{3}{4}$ mile.
Nail in blaze in peach tree (6 inches diameter).....	248	59	10	10.42 meters.
East gable of barn.....	328	26	..	$\frac{3}{4}$ mile.
Nail in blaze in locust tree (5 inches diameter).....	348	08	20	14.47 meters.
Stack of Learys sawmill.....	353	22	50	$1\frac{1}{8}$ miles.

PRUSSIAN.

General locality.—Western shore of upper Grays Inn Creek about $1\frac{5}{8}$ miles northwest of Chester River, opposite Strong's old wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in a marsh meadow about 1 foot above high water, 9 yards southwest of shore, 25 yards west of extreme end of point, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Gray" (N $13^{\circ} 48'$ W).....	0	00	00	$\frac{3}{4}$ mile.
South chimney of house.....	34	17	..	$1\frac{1}{4}$ miles.
West chimney of house.....	45	05	..	$\frac{1}{2}$ mile.
West chimney of house.....	62	10	..	$\frac{3}{8}$ mile.
West chimney of small house near shore... .	70	17	..	1 mile.
Right tangent of piles of Strong old wharf... .	92	45	..	$\frac{1}{4}$ mile.
Right tangent of tin roofed barn.....	149	10	..	5 miles.
Left tangent of piles of Harris old wharf... .	154	28	..	1 mile.
South gable of Harris hay shed.....	158	46	..	1 mile.
Chimney of house.....	287	45	..	$\frac{1}{4}$ mile.
South chimney of house.....	294	52	..	$\frac{1}{4}$ mile.

GRAY.

General locality.—Western shore of upper Grays Inn Creek about $1\frac{3}{4}$ miles northwest of Chester River, 250 yards west of Browns Point, and 1 mile south-southeast of Learys Mill Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 3 feet above high water, 10 yards south of shore, 200 yards north of a group of five pine trees, and about on line with two cedar trees north of station.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Herring" (N $44^{\circ} 12'$ E).....	0	00	00	$\frac{1}{4}$ mile.
South gable of barn.....	9	55	..	$\frac{3}{8}$ mile.
Nail in blaze in cedar tree (3 inches diameter).....	22	05	10	14.67 meters.
Chimney of Harris house.....	107	22	..	$1\frac{3}{8}$ miles.
West one of group of pine trees (12 inches diameter).....	150	45	..	200 yards.
North chimney of house.....	178	58	..	$\frac{1}{4}$ mile.
Stack of Learys sawmill.....	283	09	..	$\frac{5}{8}$ mile.
Wicks windmill.....	284	47	..	$1\frac{1}{2}$ miles.
Chimney of small house.....	289	55	..	$\frac{3}{4}$ mile.
Nail in blaze in dead cedar tree (6 inches diameter).....	307	16	00	4.43 meters.
East chimney of house.....	315	24	..	$\frac{1}{2}$ mile.
Lone dead pine tree.....	359	32	..	$\frac{1}{4}$ mile.

HERRING.

General locality.—Eastern shore of upper Grays Inn Creek about $1\frac{7}{8}$ miles northwest of Chester River, at north side of entrance to Herringtown Creek and about five-eighths mile east-southeast of Leary sawmill. (See Chart No. 30.)

Immediate locality.—Observed station is in a marsh meadow about 2 feet above high water, 20 yards north of shore, 5 yards west of a rail fence, 7 yards south of a lone dead pine tree, 75 yards south of a lone cedar tree, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"No Road" (S 14° 43' E).....	0	00	00	¾ mile.
North chimney of house.....	58	28	..	¾ mile.
Nail in blaze in dead pine tree (30 inches diameter).....	201	30	10	6.66 meters.
Chimney of house.....	215	40	..	¾ mile.
Chimney of house.....	223	53	..	¼ mile.
East chimney of house.....	273	48	..	½ mile.
West chimney of house.....	300	02	..	300 yards.

NO ROAD.

General locality.—Eastern shore of upper Grays Inn Creek about 1½ miles northwest of Chester River at south side of entrance to Herrington Creek, near Strong old wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a clay and sand beach on a wooded shore about 1 foot above high water, 5 yards east of shore, and 17 yards east of end of piles of an old wharf.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Cut" (S 12° 04' E).....	0	00	00	¼ mile.
Left tangent of piles of Strong old wharf....	87	10	..	100 yards.
South chimney of house.....	100	38	..	½ mile.
Stack of Leary sawmill.....	148	50	..	1 mile.
Wicks windmill.....	153	37	20	2¼ miles.
East chimney of house.....	157	50	..	1¼ miles.
East gable of barn.....	168	23	..	¾ mile.
Nail in blaze in pine tree (18 inches diameter).....	199	25	50	24.75 meters.
Nail in blaze in gum tree (18 inches diameter).....	316	57	00	8.16 meters.

CUT.

General locality.—Eastern shore of upper Grays Inn Creek, on point about 1¾ miles northwest of Chester River, and one-half mile south of Herrington Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land below high water, about 13 yards north of shore, 60 yards northwest of three large cedar trees, 35 yards southwest of a wire fence at edge of woods, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"No road" (N 12° 04' W).....	0	00	00	¼ mile.
Nail in blaze in pine tree (6 inches diameter).....	67	32	10	22.31 meters.
Nail in blaze in cedar tree (12 inches diameter).....	97	06	10	28.19 meters.
West gable of barn.....	145	52	..	4 miles.
Left tangent of piles of Harris old wharf....	164	09	..	¾ mile.
East chimney of Harris house.....	171	22	..	¾ mile.
East gable of barn.....	299	34	..	¼ mile.
North chimney of house.....	304	41	..	¼ mile.
South gable of house.....	341	41	..	1¼ miles.
Left tangent of piles of Strong old wharf....	348	25	..	¼ mile.

FORE.

General locality.—Eastern shore of Grays Inn Creek, on point about 1 mile northwest of Chester River, and three-eighths mile north of Harris Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point, about 1 foot above high water, 3 yards northwest of shore, 11 yards north-northeast of extreme end of point, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 12 inches above surface of marsh. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Lucy" (S 36° 11' W).....	0	00	00	¾ mile.
North chimney of house.....	78	17	..	1¼ miles.
East gable of small house.....	80	43	..	1¼ miles.
Swamp oak tree (2 feet diameter).....	131	28	..	100 yards.
Southwest corner of Strong tenant house....	234	28	..	¾ mile.
Lone sycamore tree (12 inches diameter)....	274	58	..	¾ mile.
West gable of barn on Grove Creek.....	278	30	..	4¼ miles.
North gable of barn with two cupolas.....	287	49	..	3¾ miles.
Chimney of Harris tenant house.....	319	50	..	¾ mile.
Left tangent of piles of Harris old wharf....	321	36	..	¾ mile.
East gable of Harris barn.....	328	02	..	¾ mile.

ISLAND.

General locality.—Eastern shore of Grays Inn Creek, about five-eighths mile northwest of Chester River, on Island Point opposite Harris Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land, about 1 foot above high water, 3 yards north-east of shore, and 400 yards west of a house. Cement monument marking reference station is 9.01 meters N 43° 38' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe, with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Tray" (S 36° 22' E).....	0	00	00	¾ mile.
Left tangent of woods on Hail Point.....	33	13	..	5¾ miles.
Lone poplar tree.....	65	03	..	¾ mile.
East gable of Harris house.....	68	27	..	½ mile.
East gable of Harris barn.....	73	32	..	½ mile.
Right tangent of piles of old wharf.....	93	29	..	¾ mile.
Chimney of small house.....	153	23	..	1¼ miles.
East chimney of house.....	171	07	..	¾ mile.
East gable of Strong tenant house.....	197	31	..	¼ mile.
REFERENCE STATION.....	259	59	50	9.01 meters.
Chimney of Strong old distillery.....	308	33	..	¼ mile.
Lone cedar tree near shore.....	354	59	..	300 yards.

TRAY.

General locality.—Eastern shore of Grays Inn Creek, about one-fourth mile northwest of Chester River, three-eighths mile southeast of Island Point, and one-half mile east of Harris Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point, about 1 foot above high water, 4 yards northeast of shore, 10 yards southwest of a small locust stump at foot of bank, and 12 yards southwest of foot of slope. Cement monument marking reference station is 8.86 meters N 53° 42' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe, with top flush with surface of ground. Sub-surface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 7 inches above surface of ground.

<i>References.</i> —	°	'	"	
"Island" (N 36° 21' W).....	0	00	00	¾ mile.
REFERENCE STATION.....	90	02	50	8.86 meters.
Nail in blaze in locust tree (4 inches diameter).....	90	28	40	10.60 meters.
Nail in blaze in persimmon tree (6 inches diameter).....	129	25	10	9.75 meters.
Right tangent of woods on Hail Point.....	217	29	..	5 miles.
Northeast corner of barn.....	239	43	..	1 mile.
East gable of Harris house.....	287	44	..	½ mile.
Chimney of Harris tenant house.....	304	05	..	⅝ mile.
North gable of house near shore.....	312	02	..	⅝ mile.
North gable of barn.....	338	10	..	1½ miles.
South chimney of house.....	354	21	..	1¾ miles.

INN.

General locality.—Eastern shore of Grays Inn Creek, about one-eighth mile northwest of Chester River and one-half mile southeast of Island Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a peach orchard, about 4 feet above high water, and 25 yards northeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 3 inches below base of monument.

<i>References.</i> —	°	'	"	
"Holton Point" (S 72° 50' E).....	0	00	00	2⅝ miles.
Nail in blaze in sycamore tree (30 inches diameter).....	13	24	30	4.53 meters.
North cupola on barn.....	38	57	..	2½ miles.
Left tangent of woods on Hail Point.....	74	54	..	4½ miles.
East gable of Swatska barn.....	101	19	..	1¼ miles.
East chimney of house.....	119	02	..	½ mile.
East gable of Harris house.....	150	53	..	⅝ mile.
East gable of small house.....	175	15	..	⅝ mile.
Nail in blaze in peach tree (8 inches diameter).....	252	41	50	11.71 meters.
Southwest corner of Earle bathhouse.....	359	28	..	3 miles.

HOLTON POINT.

General locality.—Eastern shore of Chester River on Holton Point, at south side of entrance to Corsica River. (See Chart No. 30.)

Immediate locality.—Observed station is on low sand beach, about on level with high water, and one-fourth mile west of small bathhouse. Cement monument marking reference station is 5.40 meters S 48° 06' E of observed station.

Marks.—Observed station is nail in 3-inch cement-filled tile pipe, with top about 6 inches below surface of ground, encased in a cement cake bearing the legend "U. S. C. S. 1896." Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Bay Bush Point" (S 61° 15' W)	0	00	00	2½ miles.
East chimney of house.....	19	49	..	3 miles.
Chimney of small house.....	27	23	..	3 miles.
East gable of barn.....	38	39	..	3½ miles.
East gable of small house.....	57	08	..	2¼ miles.
South gable of barn.....	67	37	..	2¼ miles.
South gable of house.....	80	09	..	2¾ miles.
East chimney of house.....	94	17	..	1¾ miles.
West chimney of house.....	130	52	..	2 miles.
South gable of corn crib.....	157	14	..	¾ mile.
West gable of barn.....	184	04	..	1 mile.
REFERENCE STATION.....	247	38	20	5.40 meters.
Nail in blaze in persimmon tree (4 inches diameter).....	321	38	00	28.35 meters.
North gable of barn.....	329	38	..	2½ miles.
North gable of barn.....	343	06	..	4¾ miles.
East gable of barn.....	357	02	..	4¼ miles.

EARLE.

General locality.—Southern shore of Corsica River on Town Bar Point about one-half mile east of Chester River and 100 yards north of Earle Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 5 yards south of shore, 19 yards north of a pond, and 100 yards north of Earle Wharf.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hydrographic" (S 64° 38' E).....	0	00	00	¼ mile.
Lone sycamore tree.....	10	43	..	¼ mile.
East chimney of house.....	18	56	..	¼ mile.
Southeast pile at end of Earle Wharf.....	48	59	..	100 yards.
Nail in blaze in locust tree (5 inches diameter).....	63	18	00	12.92 meters.
Nail in blaze in locust tree (3 inches diameter).....	87	58	50	11.07 meters.
Earle windmill.....	118	07	..	300 yards.
East gable of barn.....	165	21	..	3½ miles.
East gable of small house.....	179	26	..	2¾ miles.
Church steeple at Crosby.....	196	20	..	3¾ miles.
South gable of Brown house.....	209	09	..	2¼ miles.
West chimney of Sissel house.....	244	53	..	¾ mile.
South gable of Emory barn.....	298	08	..	¾ mile.
West chimney of house.....	338	10	..	1½ miles.

HYDROGRAPHIC.

General locality.—Southern shore of Corsica River about 1½ miles east of Chester River and one-half mile east of Earle Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is near edge of cultivated field about 3 feet above high water, 20 yards south of shore, 4 yards south of edge of bank 3 feet high, and 400 yards north of lone sycamore tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Earle" (N 64° 37' W).....	0	00	00	5/8 mile.
Church steeple at Crosby.....	14	03	..	4 1/4 miles.
East gable of barn.....	19	13	..	3 1/2 miles.
South gable of Sissel barn.....	33	12	..	3/4 mile.
South gable of Emory barn.....	73	18	..	5/8 mile.
Southwest corner of Emory Wharf house....	75	44	..	1/2 mile.
West gable of barn.....	114	51	..	3/4 mile.
West gable of barn.....	135	37	..	1 5/8 miles.
West chimney of house.....	148	56	..	1 1/4 miles.
East chimney of house.....	231	23	..	3/4 mile.
Nail in blaze in apple tree (12 inches diameter).....	327	14	30	16.00 meters.
Southeast corner of Earle Wharf house.....	354	51	..	1/2 mile.

RUTH.

General locality.—Southern shore of Corsica River about 1 1/2 miles east of Chester River and one-eighth mile northwest of entrance to Tilghmans Cove. (See Chart No. 30.)

Immediate locality.—Observed station is in cultivated field about 15 feet above high water, 10 yards south of shore, 2 yards west of edge of slope, and 6 yards south of edge of slope.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hydrographic" (N 82° 13' W).....	0	00	00	3/8 mile.
East chimney of Earle tenant house.....	0	11	..	1 mile.
South gable of Sissel barn.....	36	30	..	1 mile.
Southeast corner of Emory Wharf house....	54	13	..	5/8 mile.
South gable of Emory barn.....	60	05	..	3/4 mile.
Chimney of Emory house.....	64	17	..	3/4 mile.
East post of front porch of house.....	109	34	..	3/4 mile.
Nail in blaze in oak tree (24 inches diameter).....	119	49	10	9.98 meters.
Nail in blaze in cedar tree (6 inches diameter).....	223	53	20	14.30 meters.
East gable of small barn.....	308	56	..	3/8 mile.
Lone sycamore tree.....	319	36	..	3/4 mile.

MELFIELD.

General locality.—Southern shore of Corsica River about 1 1/8 miles east of Chester River, 1 mile southeast of Emory Wharf, and one-eighth mile east of entrance to Tilghmans Cove. (See Chart No. 30.)

Immediate locality.—Observed station is in cultivated field about 18 feet above high water, 10 yards south of shore, 5 yards south of edge of bluff, and 10 yards west of a ravine.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ruth" (N 71° 32' W).....	0	00	00	3/8 mile.
East gable of barn.....	11	02	..	5 miles.
Left tangent of Emory Wharf.....	29	50	..	7/8 mile.
East chimney of Emory house.....	38	10	..	1 mile.
Southwest corner of house.....	74	26	..	3/4 mile.
Cupola on Emory Wharf house.....	96	53	..	1 1/8 miles.
Nail in blaze in walnut tree (8 inches diameter).....	119	34	10	3.81 meters.
Nail in blaze in gum tree (7 inches diameter).....	179	56	10	16.18 meters.
West gable of barn.....	195	19	..	3/8 mile.
Nail in blaze in locust tree (6 inches diameter).....	336	32	10	13.85 meters.
South chimney of Earle house.....	350	42	..	1 3/8 miles.

BATH.

General locality.—Southern shore of Corsica River on Wash Point about 2 miles east of Chester River, one-half mile west of Rocky Point, and one-fourth mile southeast of Ship Point. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 15 yards east of shore, 13 yards west of a pond, and surrounded by dense growth of bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 8 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Melfield" (S 30° 54' W).....	0	00	00	1/2 mile.
Left tangent of peak of barn.....	24	38	..	1 mile.
Earle windmill.....	53	43	..	1 5/8 miles.
Left edge of Earle Wharf house.....	56	38	..	1 1/2 miles.
East chimney of house.....	86	14	..	1 mile.
South chimney of house.....	120	55	..	3/8 mile.
West chimney of house.....	217	12	..	3/4 mile.
North one of two cedar trees on hill.....	267	01	..	1/4 mile.
Nail in blaze in hackberry tree (12 inches diameter).....	326	23	50	3.06 meters.
Nail in blaze in pear tree (15 inches diameter).....	345	11	50	6.79 meters.

SHIP.

General locality.—Northern shore of Corsica River on Ship Point at west side of entrance to Emorys Creek, about 1 7/8 miles east of Chester River, and five-eighths-mile east of Emory Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point covered with bushes about 1 foot above high water, 6 yards west of shore, and 75 yards south of a cedar tree covered with grape vines.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References

"Ruth" (S 39° 11' W).....	0	00	00	5½ mile.
North gable of barn.....	3	22	..	¾ mile.
Earle windmill.....	40	59	..	1½ miles.
Left edge of Earle Wharf house.....	43	35	..	1¼ miles.
East gable of barn.....	128	34	..	¼ mile.
Nail in blaze in cedar tree (7 inches diameter).....	144	33	30	12.52 meters.
West gable of barn.....	217	05	..	1¼ miles.
West chimney of house.....	220	00	..	1¼ miles.
North chimney of house.....	229	59	..	1¼ miles.
West chimney of house.....	251	20	..	¾ mile.

ENGINEER.

General locality.—Northern shore of Corsica River about 1 mile east of Chester River, five-eighths mile northeast of Earle Wharf, and 50 yards west of Emory Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marshland about 1 foot above high water, 12 yards north of shore, 50 yards west of Emory Wharf, and 50 yards southeast of a pond.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

"Ruth" (S 29° 36' E).....	0	00	00	5½ mile.
East chimney of house.....	29	31	..	¾ mile.
Nail in blaze in pear tree (6 inches diameter).....	70	38	40	99.95 feet.
Earle windmill.....	90	13	..	¾ mile.
Lone cedar tree.....	165	42	..	125 yards.
South gable of Emory barn.....	219	59	..	300 yards.
East chimney of Emory house.....	257	47	..	250 yards.
West chimney of house.....	317	59	..	1¾ miles.
Northeast corner of Emory Wharf house....	321	35	..	156.94 feet.

SWEPSON.

General locality.—Northern shore of Corsica River opposite Town Bar Point about one-half mile east of Chester River, three-eighths mile north of Earle Wharf, and three-eighths mile west of Emory Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marshland about 1 foot above high water, 12 yards north of shore, 10 yards south of lone cedar tree, and 12 yards east of small ditch draining swamp.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

"Hydrographic" (S 32° 06' E).....	0	00	00	5½ mile.
East chimney of house.....	6	32	..	¾ mile.
Chimney of house.....	44	28	..	5¼ mile.
Earle windmill.....	71	46	..	½ mile.
Nail in blaze in cedar tree (15 inches diameter).....	230	15	30	9.50 meters.
South gable of Emory barn.....	282	58	..	½ mile.
West gable of barn.....	332	36	..	1¼ miles.
North chimney of small house.....	355	19	..	1½ miles.
Chimney of small house.....	357	28	..	2¼ miles.

CORSICA.

General locality.—Eastern shore of Chester River at north side of entrance to Corsica River about three-eighths mile south of Lower Spaniard Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 7 feet above high water, 16 yards east of shore, 11 yards east of edge of bank, and 5 yards south of young peach orchard.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Swepson" (S 54° 31' E).....	0	00	00	1½ mile.
North chimney of house.....	19	17	..	1¼ miles.
Earle windmill.....	52	39	..	¾ mile.
Northwest corner of Earle bathhouse.....	54	01	..	¾ mile.
Left tangent of woods on Gordon Point.....	93	50	..	2¾ miles.
Chimney of small house.....	145	49	..	3¾ miles.
South gable of barn.....	187	43	..	2½ miles.
West gable of Sissel corn crib.....	318	25	..	½ mile.
Locust tree (24 inches diameter).....	359	07	..	150 yards.

DEEP COVE.

General locality.—Western shore of Chester River on point at west side of entrance to Langford Creek and south side of entrance to Deep Cove. (See Chart No. 30.)

Immediate locality.—Observed station is on marshland about 1 foot above high water, 10 yards inshore, 50 yards east of a dead tree 2 feet in diameter, 80 yards southeast of a tall poplar tree, and 300 yards east of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Gordon" (S 6° 44' E).....	0	00	00	2¾ miles.
East pine tree of group on Piney Point.....	5	25	..	3½ miles.
Spindle on gable of barn.....	47	08	..	1¾ miles.
Lone poplar tree.....	59	20	..	¼ mile.
Northeast corner of Ashley house.....	87	57	..	300 yards.
Southeast corner of fishing shack.....	124	34	..	200 yards.
Lone pine tree.....	136	01	..	¼ mile.
South gable of house.....	193	50	..	1¼ miles.
West chimney of house.....	200	47	..	1½ miles.
West gable of barn.....	243	30	..	1 mile.
North chimney of house at Cliffs Landing.....	256	16	..	2 miles.
North gable of barn.....	288	41	..	2¾ miles.
Southwest corner of Earle bathhouse.....	307	09	..	2½ miles.
North gable of barn.....	355	07	..	2½ miles.

SNUB.

General locality.—Western shore of Langford Creek on prominent point about three-eighths mile north of Chester River between Deep Cove and Long Cove. (See Chart No. 30.)

Immediate locality.—Observed station is on a low sand point about 2 feet above high water, 8 yards west of shore, and 75 yards north of cedar trees on shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Deep Cove" (S 5° 21' W).....	0	00	00	¾ mile.
Lone pine tree.....	11	37		75 yards.
Lone poplar tree (18 inches diameter).....	140	34		300 yards.
East chimney of house.....	160	56		1 mile.
West chimney of house.....	174	57		1 mile.
West chimney of house.....	193	06		¾ mile.
South chimney of house.....	212	17		2¾ miles.
West chimney of house.....	228	09		1¾ miles.
South chimney of Brown house.....	249	07		1½ miles.
West gable of house.....	267	36		4 miles.
Left edge of Earle bathhouse.....	305	40		2½ miles.
West gable of barn on Reeds Creek.....	334	41		4 miles.

LAWYER.

General locality.—Western shore of Langford Creek on Long Point about 1 mile north of Chester River between Long Cove and Lawyers Cove. (See Chart No. 30.)

Immediate locality.—Observed station is on a low sand point about 1 foot above high water, 8 yards west of extreme east end of point, and 30 yards east of group of pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Peach" (S 41° 41' E).....	0	00	00	¾ mile.
East gable of barn.....	20	38		3¼ miles.
Southeast chimney of Strong house.....	84	03		½ mile.
Nail in blaze in twin pine tree (18 inches diameter).....	121	07	20	26.76 meters.
Nail in blaze in pine tree (12 inches diameter).....	134	41	50	26.07 meters.
South chimney of house.....	141	33		¾ mile.
East chimney of house.....	170	21		¾ mile.
East chimney of house.....	194	05		¼ mile.
West chimney of house.....	242	39		¼ mile.
West chimney of Brown house.....	323	45		¾ mile.

DRUM.

General locality.—Western shore of Langford Creek on Drum Point about 1¼ miles north of Chester River, between Lawyers Cove and Davis Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in a marsh meadow, about 2 feet above high water, 13 yards north of shore, 15 yards south of shore, and 13 yards west of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Major" (S 54° 41' E).....	0	00	00	¾ mile.
West gable of Brown house.....	9	59		¾ mile.
Left tangent of woods on Hail Point.....	65	19		6 miles.
East chimney of Ashley house.....	88	26		1¼ miles.
East gable of house.....	171	22		½ mile.
Chimney of small house.....	215	51		¾ mile.
South gable of barn.....	249	18		1½ miles.
West chimney of house.....	271	20		1½ miles.
West chimney of house.....	305	02		¾ mile.

DAVIS.

General locality.—Western shore of Langford Creek on point about $1\frac{3}{4}$ miles north of Chester River, one-eighth mile northeast of entrance to Davis Creek, five-eighths mile north of Drum Point, and nearly opposite Orchard Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 20 yards northwest of shore, and 10 yards northwest of top of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Drum" (S $10^{\circ} 07'$ E).....	0	00	00	$\frac{5}{8}$ mile.
Nail in blaze in oak tree (4 inches diameter). 21	47	30	.....	16.50 meters.
Chimney of small house..... 207	06	..	.....	1 mile.
South gable of barn..... 234	11	..	.....	$1\frac{1}{4}$ miles.
West chimney of house..... 267	34	..	.....	$1\frac{1}{8}$ miles.
West chimney of house..... 294	35	..	.....	1 mile.
Nail in blaze in oak tree (15 inches diameter). 324	22	10	.....	10.46 meters.
Chimney of house..... 337	30	..	.....	$1\frac{1}{8}$ miles.
North gable of house on Reeds Creek..... 357	28	..	.....	6 miles.

ISLE.

General locality.—Western shore of West Fork of Langford Creek, on Island Point, about one-fourth mile north of main body of creek and three-eighths mile northwest of Cacaway Island. (See Chart No. 30.)

Immediate locality.—Observed station is on a low sand point about 1 foot above high water, 5 yards south of shore, 8 yards north of shore, 50 yards west of extreme end of point, and 20 yards east of foot of wooded bluff 15 feet high. Cement monument marking reference station is 5.55 meters S $79^{\circ} 32'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Eagle" (N $43^{\circ} 25'$ W).....	0	00	00	$\frac{1}{2}$ mile.
South gable of Leary corncrib..... 1	41	..	.....	$1\frac{3}{4}$ miles.
West chimney of house..... 47	18	..	.....	$1\frac{1}{4}$ miles.
Chimney of small house..... 75	51	..	.....	$\frac{1}{2}$ mile.
North chimney of house..... 142	13	..	.....	$1\frac{1}{4}$ miles.
North gable of barn..... 153	58	..	.....	1 mile.
Lone cedar tree on Drum Point..... 234	51	..	.....	1 mile.
REFERENCE STATION..... 302	57	00	.....	5.55 meters.
South chimney of house..... 355	56	..	.....	$1\frac{1}{4}$ miles.

EAGLE.

General locality.—Western shore of West Fork of Langford Creek, on Eagle Point at south side of entrance to Graveyard Cove, about three-fourths mile northwest of main body of Langford Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on prominent bluff about 20 feet above high water, 26 yards west of extreme end of point, 11 yards south of top of bank, 8 yards north of top of bank, and 2 yards north of small cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hornor" (N 84° 09' E)	0	00	00	¼ mile.
Left tangent of Cacaway Island.....	42	07	..	¾ mile.
Nail in blaze in stump near top of bank....	85	52	40	9.96 meters.
North chimney of house.....	131	49	..	1 mile.
Lone oak tree (12 inches diameter).....	153	29	..	¼ mile.
Nail in blaze in stump (15 inches diameter). 202	06	10	..	4.54 meters.
East chimney of De Ford house.....	216	44	..	¾ mile.
South chimney of house.....	224	39	..	¾ mile.
Lone cedar tree.....	268	44	..	¾ mile.
Chimney of small house.....	280	49	..	1½ miles.

FORD.

General locality.—Western shore of West Fork of Langford Creek about 1 mile northwest of main body of Langford Creek, three-eighths mile northwest of Eagle Point, and one-half mile south of Whale Point. (See Chart No. 30.)

Immediate locality.—Observed station is in garden about 20 feet above high water, 9 yards southwest of shore, 7 yards southwest of top of bank, and 80 yards southeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Kinsley" (N 21° 24' W).....	0	00	00	¼ mile.
Nail in blaze in cherry tree (12 inches diameter).....	18	56	20	10.76 meters.
Lone cedar tree.....	50	01	..	½ mile.
South gable of old barn.....	71	15	..	1 mile.
Nail in blaze in cedar tree (8 inches diameter).....	136	05	20	6.23 meters.
Twin oak tree on Eagle Point.....	148	51	..	¾ mile.
East gable of De Ford house.....	311	47	..	80 yards.
Walnut tree (12 inches diameter).....	324	13	..	50 yards.

KINSLEY.

General locality.—Western shore of West Fork of Langford Creek on Pastor Point about 1¼ miles northwest of main body of Langford Creek and one-fourth mile south of Whale Point. (See Chart No. 30.)

Immediate locality.—Observed station is about 2 feet above high water, 6 yards west of shore, 200 yards north of a wharf, and at foot of slope rising to an elevation of 10 feet.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Whale" (N 3° 10' E).....	0	00	00	¼ mile.
Chimney of house.....	22	01	..	1¼ miles.
Lone cedar tree.....	63	18	..	¾ mile.
South gable of barn.....	71	35	..	¾ mile.
West chimney of De Ford house.....	168	05	..	¾ mile.
End of Kinsley wharf.....	178	58	..	200 yards.
Nail in blaze in wild-cherry tree (12 inches diameter).....	195	51	10	4.01 meters.
Nail in blaze in twin stump.....	242	42	30	2.57 meters.
North chimney of Leary house.....	329	45	..	¾ mile.

WHALE.

General locality.—Western shore of West Fork of Langford Creek, on Whale Point, at south side of entrance to Bungay Creek, about $1\frac{1}{2}$ miles northwest of main body of Langford Creek, and three-eighths mile southwest of Vickers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 2 feet above high water, 6 yards southwest of shore, and 300 yards northeast of a house. Cement monument marking reference station is 8.75 meters $S\ 35^{\circ}\ 27'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Nat" ($S\ 76^{\circ}\ 46'$ E).....	0	00	00	$\frac{1}{4}$ mile.
Left tangent of Eagle Point.....	46	25	..	$\frac{3}{4}$ mile.
West chimney of De Ford house.....	73	51	..	$\frac{3}{8}$ mile.
Nail in blaze in cedar tree (6 inches diameter).....	82	53	50	7.20 meters.
REFERENCE STATION.....	112	12	10	8.75 meters.
Nail in blaze in cedar tree (12 inches diameter).....	130	49	20	13.55 meters.
North chimney of house.....	307	45	..	$\frac{3}{4}$ mile.
Left tangent of piles of Vickers Wharf.....	307	54	..	$\frac{1}{4}$ mile.
West chimney of house.....	354	11	..	$\frac{3}{4}$ mile.

BUNGAY.

General locality.—Western shore of West Fork of Langford Creek, on point at north side of entrance to Bungay Creek, about $1\frac{1}{4}$ miles northwest of main body of Langford Creek and one-fourth mile west of Vickers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a low sand point at north side of entrance to Bungay Creek, about 1 foot above high water, and 16 yards west of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Nat" ($S\ 28^{\circ}\ 21'$ E).....	0	00	00	$\frac{1}{4}$ mile.
Left edge of bank on Eagle Point.....	7	25	..	$\frac{3}{8}$ mile.
West gable of barn.....	38	01	..	$\frac{1}{2}$ mile.
North chimney of Kinsley house.....	45	08	..	$\frac{3}{8}$ mile.
North chimney of Leary house.....	58	02	..	$\frac{1}{4}$ mile.
North gable of house.....	60	26	..	$\frac{1}{2}$ mile.
South gable of house.....	205	43	..	$1\frac{3}{4}$ miles.
South gable of barn.....	238	01	..	$\frac{3}{4}$ mile.
North chimney of house.....	268	18	..	$\frac{1}{2}$ mile.
West chimney of house.....	292	48	..	$\frac{3}{8}$ mile.
Lone cedar tree (12 inches diameter).....	344	58	..	$\frac{1}{4}$ mile.

LOCUST.

General locality.—Eastern shore of West Fork of Langford Creek, near Vickers Wharf, about $1\frac{3}{4}$ miles northwest of main body of Langford Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 2 feet above high water, 5 yards southeast of shore, and immediately back of loading platform on Vickers Wharf.

Marks.—Observed station is nail in root of a leaning locust tree 12 inches in diameter.

References.—

Drift pin in top of pile head at southeast end of Vickers Wharf.....	5.78 meters.
Drift pin in top of pile head at northwest end of Vickers Wharf.....	7.78 meters.

NAT.

General locality.—Eastern shore of West Fork of Langford Creek, opposite Whale Point, about $1\frac{3}{4}$ miles northwest of main body of Langford Creek and one-fourth mile south of Vickers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 2 feet above high water, 7 yards south of shore, 8 yards north of shore, 25 yards east of extreme end of point, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mill" (S 29° 19' E).....	0	00	00	$\frac{1}{8}$ mile.
Left tangent of Eagle Point.....	10	49	..	$\frac{3}{8}$ mile.
West gable of house.....	31	29	..	$1\frac{1}{2}$ miles.
Left edge of De Ford kitchen.....	48	38	..	$\frac{3}{8}$ mile.
North chimney of house.....	71	35	..	$\frac{3}{8}$ mile.
North gable of barn.....	75	40	..	$\frac{3}{8}$ mile.
East gable of barn.....	134	57	..	$\frac{1}{2}$ mile.
Chimney of house.....	227	58	..	$\frac{3}{4}$ mile.
Persimmon tree (3 inches diameter).....	266	01	..	70 yards.
South gable of barn.....	302	15	..	$\frac{3}{8}$ mile.

MILL.

General locality.—Eastern shore of West Fork of Langford Creek, on point at west side of a small cove about $1\frac{1}{4}$ miles northwest of main body of Langford Creek and three-eighths mile south of Vickers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 2 feet above high water, 6 yards west of shore, 7 yards east of shore, 15 yards northwest of extreme end of point, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite. Cement monument marking reference station is 9.48 meters N 2° 57' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Ford" (S 32° 51' W).....	0	00	00	$\frac{3}{8}$ mile.
East chimney of De Ford house.....	9	46	..	$\frac{3}{8}$ mile.
South chimney of house.....	38	14	..	$\frac{3}{8}$ mile.
North chimney of house.....	72	11	..	$\frac{3}{8}$ mile.
South chimney of house.....	142	59	..	2 miles.
REFERENCE STATION.....	150	06	20	9.48 meters.
Long cedar tree.....	163	32	..	300 yards.
South gable of barn.....	213	24	..	$\frac{1}{2}$ mile.
Chimney of house.....	343	48	..	$\frac{3}{4}$ mile.

WEST.

General locality.—Eastern shore of West Fork of Langford Creek, on Cedar Point, at west side of entrance to Long Cove, about seven-eighths mile north of main body of Langford Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 5 yards west of shore, 8 yards east of shore, and 25 yards northwest of extreme end of point. Cement monument marking reference station is 21.85 meters N 27° 40' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

<i>References.</i> —	°	'	"	
"Mill" (N 53° 43' W).....	0	00	00	¾ mile.
Nail in blaze in cherry tree (6 inches diameter).....	77	22	30	15.45 meters.
REFERENCE STATION.....	81	22	30	21.85 meters.
Nail in blaze in oak tree (12 inches diameter).....	93	38	40	26.24 meters.
Twin oak tree on Eagle Point.....	267	17	..	¼ mile.
Chimney of house.....	282	45	..	¾ mile.
East chimney of De Ford house.....	315	37	..	½ mile.
South chimney of house.....	330	57	..	¾ mile.
North chimney of house.....	348	50	..	1¼ miles.

HORNOR.

General locality.—Eastern shore of West Fork of Langford Creek on point between Long Cove and Hornors Cove about three-fourths mile north of main body of Langford Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in a marsh meadow about 1 foot above high water, 15 yards northeast of shore, and 30 yards south of fringe of woods parallel with shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Eagle" (S 84° 10' W).....	0	00	00	¾ mile.
West chimney of De Ford House.....	20	40	..	¾ mile.
South chimney of house.....	29	03	..	1¼ miles.
North chimney of house.....	40	41	..	1½ miles.
Left edge of small house.....	242	40	..	1 mile.
Right tangent of Cacaway Island.....	261	55	..	¾ mile.
Chimney of house.....	353	56	..	¾ mile.

KING.

General locality.—On point between East Fork and West Fork of Langford Creek about 150 yards north of Cacaway Island. (See Chart No. 30.)

Immediate locality.—Observed station is on a point about 14 feet high at edge of cultivated field, 3 yards northwest of edge of bank, 3 yards east of edge of bank at gully, and 8 yards east-northeast of point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Ash" (N 44° 53' E):.....	0	00	00	¾ mile.
Left peak of large house.....	55	52	..	1¾ miles.
Nail in blaze in oak tree (8 inches diameter).....	70	26	..	6.25 meters.
Left chimney of house.....	113	18	..	3 miles.
Nail in blaze in tree (4 inches diameter).....	163	48	10	8.27 meters.
Right peak of barn.....	174	35	..	2 miles.
Nail in blaze in tree (4 inches diameter).....	246	34	20	7.49 meters.
Left chimney of mansion house.....	259	16	..	.....
Chimney of house among trees.....	295	12	..	.....

ASH.

General locality.—Western shore of East Fork of Langford Creek about one-half mile north of main body of Langford Creek and one-eighth mile northeast of north end of Cacaway Island. (See Chart No. 30.)

Immediate locality.—Observed station is in cultivated land about 10 feet above high water, 35 yards northwest of shore, 14 yards northwest of edge of low bank, 20 yards northwest of line of trees along shore, and 36 yards south-southwest of point of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Noth" (S 81° 49' E).....	0	00	00	3½ mile.
Left peak of long barn.....	9	25	..	1½ miles.
Nail in blaze in oak tree (14 inches diameter).....	13	43	10	19.55 meters.
Nail in blaze in oak tree (14 inches diameter).....	69	49	10	27.87 meters.
Left peak of house.....	128	38	..	1 mile.
Chimney of small house.....	183	37	..	1¾ miles.
Near peak of large house.....	196	17	..	1½ miles.
Left chimney of large mansion.....	200	11	..	1¾ miles.
Nail in blaze in oak tree (5 inches diameter).	324	03	50	21.37 meters.

NOTH.

General locality.—Western shore of East Fork of Langford Creek on point opposite Kings Creek about three-fourths mile northeast of main body of Langford Creek and one-half mile east of north end of Cacaway Island. (See Chart No. 30.)

Immediate locality.—Observed station is in cultivated land about 3 feet above high water, 6 yards west of shore, 23 yards northeast of shore, and 40 yards north of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Leary" (N 36° 47' E).....	0	00	00	¼ mile.
Southwest peak of large barn.....	24	50	..	½ mile.
Nail in blaze of oak tree (8 inches diameter).....	53	29	40	5.95 meters.
Left chimney of Stoop store.....	74	51	..	¾ mile.
Left peak of Stoop long barn.....	77	18	..	¾ mile.
Near peak of barn.....	125	11	..	¾ mile.
Nail in blaze in locust tree (3 inches diameter).....	141	54	10	4.91 meters.
Chimney of house.....	174	18	..	½ mile.
Chimney of house.....	200	00	40	3 miles.
Nail in blaze in locust tree (5 inches diameter).....	354	35	10	8.11 meters.

LEARY.

General locality.—Western shore of East Fork of Langford Creek about 1 mile northeast of main body of Langford Creek and three-eighths mile north of Haw Bush Point. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point near Leary's old wharf, about 1 foot above high water, 6 yards west of shore, 10 yards northeast of shore, and 10 yards north of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Nest" (N 33° 43' E).....	0	00	00	3½ mile.
North chimney of house.....	38	43	..	5½ mile.
House among trees.....	150	10	..	5½ mile.
Chimney of house.....	179	15	..	7½ mile.
Chimney of house.....	194	37	..	2½ miles.
Nail in blaze in cedar tree (14 inches diameter).....	255	59	40	17.45 meters.
Nail in blaze in locust tree (6 inches diameter).....	280	30	40	15.75 meters.
Nail in blaze in locust tree (7 inches diameter).....	298	51	30	15.80 meters.

NEST.

General locality.—Western shore of East Fork of Langford Creek on point about 1¾ miles northeast of main body of Langford Creek and five-eighths mile southwest of entrance to Philips Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in a pasture about 10 feet above high water, 11 yards north of edge of bank, 12 yards west of edge of bank, 16 yards west-northwest of point of bank, and 125 yards south of clump of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Woll" (N 18° 22' E).....	0	00	00	¼ mile.
Large chimney of house.....	4	41	..	3 miles.
Near large chimney of house.....	62	00	..	1 mile.
Nail in blaze in hickory stump (4 inches diameter).....	115	06	10	10.07 meters.
Chimney of small house.....	166	21	..	2 miles.
Chimney of rambling house.....	194	49	..	1½ miles.
Nail in blaze in locust tree (4 inches diameter).....	212	15	.....	12.59 meters.
Large tree in small clump.....	275	24	..	.....
Nail in blaze in oak tree (20 inches diameter).....	334	44	00	38.40 meters.
East peak of shed.....	346	12	..	.....

WOLL.

General locality.—Western shore of East Fork of Langford Creek about 1 mile north of Haw Bush Point and three-eighths mile southwest of entrance to Philips Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in corner of cultivated field about 10 feet above high water, 10 yards southwest of edge of bank, 17 yards north of edge of bank, 19 yards northwest of extreme point of bank, and 125 yards east-northeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Harp" (N 5° 32' W).....	0	00	00	1/4 mile.
South peak of barn.....	8	52	..	3/4 mile.
Large chimney of house.....	29	32	..	2 1/8 miles.
Chimney on ell of large house.....	37	37	..	1 3/8 miles.
Chimney of shanty.....	56	06	..	1 mile.
Right corner of west chimney of large brick house.....	107	59	..	3/4 mile.
East peak of large barn.....	151	18	..	1/2 mile.
Right corner of north chimney of brick house.....	155	52	..	3/8 mile.
Left tangent of chimney of house.....	247	13	..	125 yards.

HARP.

General locality.—Western shore of East Fork of Langford Creek on point opposite entrance to Philips Creek. (See Chart No. 30.)

Immediate locality.—Observed station is at southeast end of row of bushes on a marsh point about 1 foot above high water, 20 yards southwest of edge of marsh, 20 yards west of edge of marsh, 24 yards northwest of edge of marsh, and 40 yards from a tree-fringed bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Clay" (N 46° 44' W).....	0	00	00	1/2 mile.
East chimney of brick house.....	23	45	..	3/4 mile.
South peak of large barn.....	52	31	..	1 mile.
Chimney of house.....	76	58	..	2 miles.
Large square chimney on west end of house.....	167	17	..	3/4 mile.
Northeast peak of long barn.....	201	39	..	3/4 mile.
Chimney of small house.....	204	11	..	3/4 mile.

CLAY.

General locality.—Western shore of East Fork of Langford Creek about one-eighth mile south of Lovely Cove and five-eighths mile northwest of entrance to Philips Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in woods about 20 feet above high water and 6 yards southwest of edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Lovely" (N 7° 19' E).....	0	00	00	3/8 mile.
Left tangent of chimney of brick house.....	31	46	..	1/2 mile.
Nail in blaze in oak tree (12 inches diameter).....	50	30	..	4.61 meters.
Nail in blaze in oak tree (12 inches diameter).....	109	36	30	4.13 meters.
West chimney of large brick house.....	118	24	..	1 1/4 miles.
Nail in blaze in chestnut tree (10 inches diameter).....	141	50	50	6.23 meters.
Nail in blaze in chestnut tree (10 inches diameter).....	172	22	50	6.24 meters.
Nail in blaze in chestnut tree (13 inches diameter).....	220	44	20	8.15 meters.
Nail in blaze in oak tree (9 inches diameter).....	255	37	50	5.06 meters.

LOVELY.

General locality.—Western shore of East Fork of Langford Creek on north side of entrance to Lovely Cove and three-fourths mile northwest of entrance to Philips Creek. (See Chart No. 30.)

Immediate locality.—Observed station is at edge of cultivated field about 5 feet above high water, 12 yards north of shore, 1 yard north of top of slight slope, and 70 yards east of a cut in shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	'	"	
"Gut" (S 48° 15' E).....	0	00	00	¾ mile.
Chimney of large brick house.....	5	32	..	1¾ miles.
East peak of long barn.....	22	39	..	2 miles.
Nail in blaze in gum tree (3 inches diameter)	84	51	40	5.24 meters.
Nail in blaze in locust tree (3 inches diameter).....	132	22	30	13.99 meters.
Chimney on east end of brick house.....	219	10	..	¼ mile.
Near chimney of brick house.....	291	03	..	½ mile.
Nail in blaze in locust tree (3 inches diameter).....	326	51	40	2.28 meters.
Nail in blaze in locust tree (4 inches diameter).....	327	37	20	4.55 meters.

GUT.

General locality.—Eastern shore of East Fork of Langford Creek on point at north side of entrance to a small cove about one-fourth mile east of entrance to Lovely Cove and one-half mile northwest of entrance to Philips Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 15 yards northeast of edge of marsh, 16 yards north of edge of marsh, 21 yards east of edge of marsh, and 65 yards north-northwest of extreme point of marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	'	"	
"Philip" (S 38° 26' E).....	0	00	00	¼ mile.
Northeast peak of long barn.....	19	32	..	1½ miles.
Chimney on southwest end of small house..	140	06	..	1 mile.
East end of small shed.....	185	04	..	½ mile.
Near corner of brick house.....	234	02	..	¼ mile.
Southeast peak of barn.....	238	07	..	1¼ miles.
Chimney on ell of house.....	268	40	..	½ mile.
Chimney on west end of house.....	357	47	..	1½ miles.

PHILIP.

General locality.—Eastern shore of East Fork of Langford Creek at north side of entrance to Philips Creek and about five-eighths mile southeast of entrance to Lovely Cove. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 10 yards east of edge of marsh, 15 yards northeast of edge of marsh, 17 yards southeast of edge of marsh, and southwest of a small group of cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ide" (S 33° 46' E).....	0	00	00	1/4 mile.
Northeast peak of large barn.....	22	22	..	1 mile.
Chimney on ell of house.....	24	40	..	3/4 mile.
North peak of building.....	110	21	..	3/4 mile.
Southwest chimney of small house.....	160	38	..	1 5/8 miles.
East peak of small shed.....	178	21	..	1 1/4 miles.
Nail in blaze in cedar tree (4 inches diameter).....	241	33	20	15.79 meters.
Nail in blaze in water bush (3 inches diameter).....	272	24	10	9.00 meters.
Nail in blaze in cedar tree (4 inches diameter).....	340	46	00	13.97 meters.

IDE.

General locality.—Eastern shore of East Fork of Langford Creek at south side of entrance to Philips Creek about 2 miles northeast of main body of Langford Creek. (See Chart No. 30.)

Immediate locality.—Observed station is about 2 feet above high water, 17 yards east of shore, 15 yards southeast of a cut in shore; and 18 yards northeast of another cut in shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hoo" (S 17° 22' W).....	0	00	00	1/4 mile.
Northeast peak of house.....	19	30	..	1 3/8 miles.
Chimney of house.....	49	45	..	3/8 mile.
South peak of barn.....	148	20	..	3/4 mile.
Chimney of True house.....	293	22	..	3/8 mile.
East peak of large barn.....	346	27	..	3/8 mile.

HOO.

General locality.—Eastern shore of East Fork of Langford Creek about 1 5/8 miles northeast of main body of Langford Creek, seven-eighths mile north of Haw Bush Point and three-eighths mile south of entrance to Philips Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 10 yards southeast of shore, 14 yards east of shore, 20 yards north of shore, and in front of water bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cult" (S 37° 20' W).....	0	00	00	3/8 mile.
North peak of barn.....	23	23	..	3/4 mile.
South peak of barn.....	74	54	..	3/8 mile.
East peak of barn.....	115	33	..	1 1/4 miles.
South peak of barn.....	135	05	..	2 miles.
North peak of large barn.....	311	01	..	1/4 mile.
Left corner of east chimney of brick house..	318	56	..	1/4 mile.

CULT.

General locality.—Eastern shore of East Fork of Langford Creek on point about 1 1/4 miles northeast of main body of Langford Creek and one-fourth mile east of Leary's old wharf. (See Chart No. 30.)

Immediate locality.—Observed station is about 3 feet above high water, 12 yards south-southeast of shore, 16 yards east of shore, 4 yards south-southeast of a road, and 40 yards southeast of a wharf.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Wann" (S 28° 24' W).....	0	00	00	¼ mile.
Peak of house showing through trees.....	12	57	..	1 mile.
Chimney of house.....	22	32	..	2¼ miles.
South peak of house.....	53	03	..	¾ mile.
South peak of house.....	147	08	..	¾ mile.
Chimney of house.....	170	26	..	1 mile.
North chimney of house.....	224	39	..	.....
Near peak of barn.....	355	43	..	¾ mile.

WANN.

General locality.—Eastern shore of East Fork of Langford Creek on Haw Bush Point at west side of entrance to Kings Creek and Wanns Cove, and about seven-eighths mile northeast of main body of Langford Creek. (See Chart No. 30.)

Immediate locality.—Observed station is about 3 feet above high water, 2 yards south of shore, 2 yards north of shore, and 16 yards west-southwest of a persimmon tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Corn" (S 58° 36' W).....	0	00	00	¾ mile.
Chimney of house near shore.....	6	19	..	1½ miles.
Chimney on south end of house.....	11	25	..	2¼ miles.
South peak of large barn.....	58	58	..	½ mile.
East chimney of house.....	93	05	..	½ mile.
Peak of house among trees.....	134	33	..	¾ mile.
Nail in blaze in persimmon tree (9 inches diameter).....	184	32	00	12.76 meters.
Nail in blaze in oak tree.....	196	22	10	1.31 meters.
North chimney of Stoop storehouse.....	226	54	..	½ mile.
North peak of Stoop long barn.....	230	32	..	½ mile.
South chimney of house.....	271	15	..	½ mile.

CORN.

General locality.—Eastern shore of East Fork of Langford Creek on east side of a small cove about three-eighths mile east of main body of Langford Creek, and one-half mile southwest of Haw Bush Point. (See Chart No. 30.)

Immediate locality.—Observed station is in edge of cultivated land about 3 feet above high water, 12 yards east-southeast of shore, and 4 yards east-southeast of line of trees between shore and station.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Neck" (S 55° 31' W).....	0	00	00	¾ mile.
Chimney of house near shore.....	13	03	..	1 mile.
Chimney of large house.....	20	38	..	2 miles.
Nail in blaze in locust tree (5 inches diameter).....	41	48	20	3.98 meters.
Nail in blaze in locust tree (4 inches diameter).....	83	31	00	4.60 meters.
Nail in blaze in locust tree (4 inches diameter).....	132	57	00	10.47 meters.
Near peak of barn.....	144	10	..	¾ mile.
Near corner of house.....	320	42	..	½ mile.

NECK.

General locality.—Eastern shore of Langford Creek on Orchard Point at south side of entrance to East Fork of Langford Creek about one-fourth mile south of Cacaway Island. (See Chart No. 30.)

Immediate locality.—Observed station is about 6 feet above high water, 6 yards south of shore, 12 yards east of shore, 10 yards east-southeast of point of bank in cultivated field, and 30 yards northwest of corner of peach orchard.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Major" (S 4° 41' W).....	0	00	00	¾ mile.
Right peak of barn.....	31	47	..	1 ⅞ miles.
Right chimney of house.....	51	44	..	⅞ mile.
Right chimney of small house.....	73	59	..	1 ⅞ miles.
Chimney on right end of house among trees.	196	18	..	½ mile.
Nail in blaze in cedar tree (3 inches diameter).....	218	40	00	11.67 meters.
Nail in blaze in peach tree (3 inches diameter).....	305	26	50	27.58 meters.

MAJOR.

General locality.—Eastern shore of Langford Creek about 1 ⅞ miles north of Chester River, three-eighths mile southeast of Drum Point and three-fourth mile south of Orchard Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 15 feet above high water, 25 yards southeast of shore, 17 yards southeast of edge of bluff, 9 yards southeast of wire fence, and 18 yards south of locust trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Peach" (S 24° 02' W).....	0	00	00	⅝ mile.
North chimney of house.....	19	35	..	3 ¼ miles.
East gable of house.....	25	54	..	1 ½ miles.
North chimney of Ashley house.....	47	01	..	1 mile.
East gable of house.....	68	32	..	1 ¼ miles.
East gable of house.....	95	52	..	1 mile.
East chimney of house.....	103	30	..	1 mile.
Nail in blaze in locust tree (6 inches diameter).....	128	02	10	16.49 meters.
North chimney of Brown house.....	305	20	..	¼ mile.

PEACH.

General locality.—Eastern shore of Langford Creek about one-half mile north of Chester River and three-fourths mile south of Drum Point. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 4 yards east of shore, 300 yards west of peach orchard, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Langford" (S 15° 55' E).....	0	00	00	3½ mile.
North gable of house.....	11	54	..	3¾ miles.
Left tangent of woods on Hail Point.....	28	23	..	6¼ miles.
North chimney of house.....	72	35	..	2½ miles.
East gable of barn.....	123	41	..	¾ mile.
East chimney of small house.....	158	14	..	1½ miles.
East chimney of house.....	167	58	..	¾ mile.
Chimney of small house.....	179	01	..	1¼ miles.
East chimney of house.....	199	02	..	2½ miles.

LANGFORD.

General locality.—Western shore of Chester River, on Nichols Point, at east side of entrance to Langford Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a sandy point among persimmon trees about 2 feet above high water, 12 yards inshore, and 200 yards south of a marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Gordon" (S 10° 42' W).....	0	00	00	2½ miles.
East one of group of four pine trees.....	2	21	..	3½ miles.
East chimney of house.....	45	45	..	2½ miles.
Chimney of small house.....	56	27	..	2¼ miles.
Nail in blaze in persimmon tree (6 inches diameter).....	72	02	30	4.59 meters.
East chimney of house.....	87	27	..	1 mile.
South gable of barn.....	115	53	..	1½ miles.
South chimney of house.....	141	02	..	1½ miles.
Chimney of house.....	152	40	..	1½ miles.
Nail in blaze in persimmon tree (6 inches diameter).....	218	39	20	2.23 meters.
Nail in blaze in persimmon tree (4 inches diameter).....	287	15	30	7.63 meters.
Northwest corner of Earle bathhouse.....	299	00	..	1¾ miles.
Cupola on barn.....	332	26	..	2 miles.
North gable of house.....	346	57	..	2¼ miles.

SPANIARD POINT 2 UPPER.

General locality.—Southeastern shore of Chester River on Lower Spaniard Point about 1¼ miles east of Nichols Point, seven-eighths mile south of Cliffs Landing and one-half mile southwest of Spaniard Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a sand beach about 1 foot above high water, 8 yards southeast of shore, and 300 yards northwest of woods. Cement monument marking reference station is 11.72 meters S 70° 51' E of observed station.

Marks.—Observed station is nail in 3-inch cement-filled tile pipe bearing the legend "U. S. C. S. 1896," with top 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Langford" (N 87° 27' W).....	0	00	00	1¼ miles.
South gable of barn.....	2	44	..	2¾ miles.
East gable of barn.....	16	10	..	2¾ miles.
Church steeple.....	29	25	..	3 miles.
West chimney of Brown house.....	37	38	..	1¾ miles.
West chimney of house.....	76	08	..	1 mile.
Right tangent of piles of Cliffs Landing....	100	40	..	¾ mile.
South gable of house.....	101	05	..	1¾ miles.
"Westcotts Windmill".....	117	31	..	2¾ miles.
REFERENCE STATION.....	196	36	50	11.72 meters.
North gable of barn.....	295	57	..	3 miles.
Right tangent of woods on Gordon Point....	302	00	..	3 miles.
East chimney of house on Grays Inn Creek..	352	39	..	3¾ miles.

QUAKER.

General locality.—Western shore of Chester River in Cliff Bight about three-fourths mile north of Nichols Point. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 3 feet above high water, 8 yards north-west of shore, 8 yards southeast of a wire fence and a row of pear trees, and 6 yards south of a group of persimmon trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Brown" (N 80° 42' E).....	0	00	00	¾ mile.
West gable of barn.....	15	05	..	2½ miles.
Left tangent of Spaniard Wharf.....	24	17	..	1¼ miles.
Northeast corner of Earle house.....	70	08	..	2 miles.
North gable of house near Reeds Creek.....	102	24	..	3¼ miles.
Right tangent of woods on Gordon Point....	114	37	..	3½ miles.
Lone oak tree.....	147	43	..	½ mile.
Nail in blaze in hackberry tree (6 inches diameter).....	203	08	30	4.81 meters.
Nail in blaze in persimmon tree (8 inches diameter).....	319	19	..	3.43 meters.
West chimney of house.....	351	40	..	¾ mile.

EVANS.

General locality.—Southeastern shore of Chester River on Upper Spaniard Point about five-eighths mile south of Cliffs Landing and one-eighth mile northeast of Spaniard Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 10 yards north of shore, and 200 yards east of end of Spaniard Wharf.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Chester" (S 80° 13' E)	0	00	00	¾ mile.
Lone walnut tree (6 inches diameter)	106	17	..	200 yards.
South gable of fishing shack near shore	136	00	..	½ mile.
"Spaniard Wharf 1896" (old triangulation station)	124	49	30	2.49 meters.
Right tangent of piles at end of Spaniard Wharf	167	23	..	250 yards.
North chimney of house	189	26	..	1½ miles.
West chimney of house	212	13	..	1½ miles.
Chimney of Martin cabin	219	20	..	¾ mile.
North gable of Cliffs Landing house	234	31	..	¾ mile.
East chimney of house	247	28	..	¾ mile.
North gable of barn	276	23	..	1¾ miles.
"Westcotts Windmill"	282	55	10	1¾ miles.
East gable of barn	308	31	..	1½ miles.
North gable of Hay barn	318	03	..	2¼ miles.
East gable of barn	348	39	..	1¼ miles.

BROWN.

General locality.—Northwestern shore of Chester River on Cliffs Point between Cliffs Bight and Commegys Bight about one-fourth mile west of Cliffs Landing. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 12 feet above high water, 25 yards north of shore, 7 yards north of edge of bank, and 45 yards southeast of a large cherry tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Deep Point 2" (N 80° 15' E)	0	00	00	1¾ miles.
West gable of barn	4	49	..	2½ miles.
West chimney of house	22	55	..	1¾ miles.
North gable of small fishing shack	82	04	..	¾ mile.
North gable of barn	115	26	..	3½ miles.
Nail in blaze in locust tree (5 inches diameter)	157	07	10	13.55 meters.
Nail in blaze in walnut tree (15 inches diameter)	209	09	50	14.13 meters.
East gable of house	220	55	..	300 yards.
East gable of barn	334	04	..	300 yards.
West chimney of house	338	33	..	1¼ miles.
Northwest corner of Martin shack	343	03	..	77 yards.
West gable of wharf house	355	27	..	¼ mile.

STRATTON.

General locality.—Northwestern shore of Chester River at west side of entrance to Commegys Bight near Cliffs Landing and about one-fourth mile northeast of Cliffs Point. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about on level with high water, 5 feet north of shore, and 21 yards southwest of entrance to a small creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Deep Point 2" (N 83° 53' E).....	0	00	00	1¼ miles.
Cupola on barn.....	7	50	..	2 miles.
West gable of cornerib	23	27	..	1½ miles.
Southwest corner of wharf house.....	82	04	..	100 yards.
North gable of house.....	114	03	..	3 miles.
Right tangent of woods on Gordon Point	125	14	..	3¾ miles.
Pine tree on line with bulkhead of wharf....	154	29	..	100 yards.
North chimney of house.....	266	37	..	400 yards.
West gable of Westcott barn.....	319	58	..	1¼ miles.
West gable of barn.....	340	32	..	1¼ miles.

CHESTER.

General locality.—Southeastern shore of Chester River about three-fourths mile east of Upper Spaniard Point and seven-eighths mile south of Deep Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a low meadow about 2 feet above high water, 10 yards south of shore, 2 yards south of board and wire fence, 2 yards east of rail fence, and 35 yards northwest of gate to front yard of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Evans" (N 80° 12' W).....	0	00	00	¾ mile.
South chimney of house.....	6	21	..	2¼ miles.
East gable of Cliffs Landing house.....	23	38	..	1½ miles.
East gable of house.....	35	11	..	1½ miles.
Chimney of house.....	51	47	..	1½ miles.
South chimney of Westcott house.....	76	43	..	1½ miles.
West gable of barn.....	85	17	..	1 mile.
Left tangent of piles of Indiantown Wharf....	116	41	..	1½ miles.
South cupola of barn.....	139	37	..	1¼ miles.
West chimney of Emory house.....	158	45	..	½ mile.
West chimney of Emory tenant house.....	218	16	..	100 yards.
Nail in blaze in persimmon tree (6 inches diameter).....	247	33	10	11.67 meters.
Nail in blaze in locust tree (12 inches diameter).....	328	54	50	24.18 meters.

WESTCOTT'S WINDMILL.

General locality.—Northwestern side of Chester River about one-eighth mile inshore from northern end of Commegys Bight and 1¾ miles northeast of Cliffs Landing.

Immediate locality.—Observed station is about 35 feet high and on a barn. It is separate from the water tank which is back of the barn.

Marks.—Observed station is center point of windmill.

References.—None necessary.

CORPSE.

General locality.—Southeastern shore of Chester River about three-eighths mile southeast of Deep Point, 1½ miles east-northeast of Spaniard Wharf, and five-eighths mile southwest of Indiantown Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a sanded marsh strip about 1 foot above high water, 3 yards east of shore, 18 yards south-southeast of a point, 43 yards north by east of another point, and one-eighth mile west of a large house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Chester" (S 39° 24' W).....	0	00	00	7½ mile.
Right tangent of Spaniard Wharf.....	30	29	..	1½ miles.
Chimney of house near Cliffs Landing.....	61	43	..	1¾ miles.
Right peak of house on Deep Point.....	83	48	..	½ mile.
Left one of two chimneys on south end of brick house.....	147	03	..	1 mile.
Left tangent of Indiantown Wharf.....	173	17	..	¾ mile.
Chimney of ell of house near Indiantown Wharf.....	181	53	..	¾ mile.
Left tangent of large house.....	228	11	..	¼ mile.
Right chimney of house.....	297	55	..	½ mile.
Chimney outside of old house.....	359	07	..	¾ mile.

DEEP POINT 2.

General locality.—Northwestern shore of Chester River on Deep Point about 1¼ miles east of Cliffs Landing, 1¼ miles northeast of Spaniard Wharf, and three-fourths mile west of Indiantown Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is about 1 foot above high water, among several cedar and poplar trees on a point, 13 yards northeast of shore, 21 yards southwest by west of shore, 40 yards northwest of extreme end of point, and 120 yards southeast of a 1½-story house. Cement monument marking reference station is on line with west end of house 17.14 meters N 53° 52' W of observed station.

Marks.—Observed station is nail in center of 2-inch tile pipe set in cement with top 2 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

<i>References.</i> —	°	'	"	
"Thorn" (N 40° 10' E).....	0	00	00	¾ mile.
Left chimney of house.....	11	43	..	3¾ miles.
Left tangent of Ashland Wharf.....	13	04	..	1¾ miles.
Near chimney on west peak of house.....	22	58	..	2½ miles.
Southwest peak of house near Indiantown Wharf.....	31	23	..	¾ mile.
Nail in blaze in branch of cedar tree (15 inches diameter).....	45	27	00	11.48 meters.
Cupola on barn.....	61	43	..	1 mile.
Nail in blaze in poplar tree (11 inches diam- eter).....	93	54	00	15.02 meters.
Largest one of three chimneys of house.....	102	07	..	1¼ miles.
Chimney of brick house.....	153	25	..	1 mile.
Chimney on near peak of house.....	233	39	..	1¼ miles.
REFERENCE STATION.....	265	58	20	17.14 meters.
Nail in blaze in poplar tree (10 inches diam- eter).....	266	00	20	17.78 meters.
Right tangent of back of Westcott house.....	279	56	..	120 yards.
Nail in blaze in branch of double tree (8 inches diameter).....	340	43	00	19.74 meters.

INDIAN.

General locality.—Southeastern shore of Chester River near Indiantown Wharf about three-fourths mile east-northeast of Deep Point. (See Chart No. 30.)

Immediate locality.—Observed station is about 2 feet above high water, 10 yards east of shore end of Indiantown Wharf, 10 yards southeast of shore, 21 yards north of curved fence of yard of a small house, and 40 yards north by west of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Corpse" (S 38° 10' W).....	0	00	00	5/8 mile.
Right tangent of Spaniard Wharf.....	22	40	..	2 miles.
Right chimney of Westcott bungalow.....	34	55	..	3/4 mile.
Near corner of wharf house.....	72	50	..	100 yards.
Left tangent of Massey brick house.....	96	48	..	1/2 mile.
Large chimney of house beyond trees.....	146	08	..	1 mile.
Chimney of small house near Quaker Neck Wharf.....	161	24	..	1 1/4 miles.
Left tangent of Ashland Wharf.....	176	19	..	5/8 mile.
Lone cedar tree.....	182	24	..	120 yards.
Nail in blaze in cedar tree (12 inches diameter).....	287	43	30	31.24 meters.
Near corner of house.....	288	24	..	5/8 mile.
Nail in blaze in cedar tree (10 inches diameter).....	305	59	10	18.68 meters.
Nail in blaze in cedar tree (20 inches diameter).....	319	41	10	30.92 meters.
Right tangent of curved fence.....	324	40	..	40 yards.
Chimney of large house.....	334	58	..	1 1/2 mile.

THORN.

General locality.—Northwestern shore of upper Chester River opposite White Cove near Westcott Wharf, and about three-fourths mile northeast of Deep Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 6 feet above high water, 15 yards northwest of shore, 5 yards southwest of corner of board fence, 60 yards south-southeast of a brick house, and 42 yards southwest of piles of old wharf at shore line.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Shippen" (N 43° 17' E).....	0	00	00	1/2 mile.
Near peak of large house.....	18	40	..	4 1/2 miles.
Left tangent of Ashland Wharf.....	23	21	..	5/8 mile.
Corner post of fence (4 inches diameter)....	33	23	10	4.33 meters.
Cupola of barn.....	104	13	..	7/8 mile.
Chimney of small house.....	159	09	..	1 3/4 miles.
Near corner of Massey house.....	208	40	..	1/2 mile.
Nail in blaze in peach tree (6 inches diameter).....	283	57	22	13.74 meters.
Nail in blaze in fence post (3 inches diameter).....	338	27	20	5.35 meters.

ASHLAND.

General locality.—Southeastern shore of upper Chester River near Ashland Wharf and about one-fourth mile northeast of White Cove. (See Chart No. 30.)

Immediate locality.—Observed station is about 1 foot above high water, 5 yards southeast of shore, 32 yards southwest of fence, and 20 yards west-northwest of persimmon trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Indian" (S 43° 29' W).....	0	00	00	1/2 mile.
Right tangent of Indiantown Wharf.....	5	44	..	1/2 mile.
Chimney on ell of Massey house.....	37	46	..	5/8 mile.
Chimney of small house.....	116	46	..	3/4 mile.
Peak of Quaker Neck Wharf house.....	145	43	..	3/4 mile.
Nail in blaze in fence post (4 inches diameter).....	171	12	50	28.80 meters.
Nail in blaze in persimmon tree (3 inches diameter).....	247	22	50	22.81 meters.
Nail in blaze in persimmon tree (3 inches diameter).....	289	34	10	17.29 meters.
Chimney of summerhouse.....	356	04	..	1/2 mile.

SHIPPEN.

General locality.—Northwestern shore of upper Chester River opposite Ashland Wharf on point at southern side of entrance to Shippen Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on sand and marsh point about 1 foot above high water, 6 yards southwest of shore, 12 yards northeast of shore, 15 yards north of end of sand point, and 25 yards southeast of trees along edge of cultivated field.

Marks.—Observed station is center point of triangle on standard cement monument with top projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Oyster" (N 38° 22').....	0	00	00	3/4 mile.
Chimney on left end of house.....	18	37	..	2 1/2 miles.
Peak of barn.....	26	40	..	2 1/4 miles.
Chimney on end of house.....	27	59	..	2 1/4 miles.
Chimney on right end of house.....	54	23	..	1 mile.
Left tangent of piles of Ashland Wharf.....	69	40	..	1/4 mile.
Chimney on near end of house.....	79	08	..	1 mile.
Spindle on barn cupola.....	135	58	..	1 mile.
Tangent of piles at Indiantown Wharf.....	154	35	..	5/8 mile.
Tangent of Deep Point.....	182	24	..	1 1/4 miles.
Near chimney of house.....	189	40	..	1/2 mile.
Nail in blaze in pear tree (12 inches diameter).....	263	35	40	22.59 meters.
Nail in blaze in cedar tree (10 inches diameter).....	292	46	10	20.70 meters.
Near peak of barn.....	341	44	..	5/8 mile.
Smoke pipe on Quaker Neck wharf house..	359	56	..	5/8 mile.

BURNS.

General locality.—Southeastern shore of upper Chester River opposite Quaker Neck Wharf, about one-half mile northeast of Ashland Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in meadow land about 1 foot above high water, 10 yards southeast of shore, 50 yards southwest by south of point, 145 yards northeast by east of a fence, and 200 yards northwest of another fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ashland" (S 45° 22' W).....	0	00	00	5/8 mile.
Chimney of house on Westcott Wharf.....	18	36	..	1 3/4 miles.
South peak of large barn.....	78	48	..	5/8 mile.
Near chimney of Quaker Neck Wharf house.....	89	20	..	1/2 mile.
Left chimney of old house.....	108	41	..	.....
Left tangent of hook-shaped point of marsh.....	183	22	..	1/2 mile.
Near peak of house.....	196	25	..	1 1/2 miles.
Windmill.....	234	22	30	3/4 mile.
Chimney of house.....	280	56	..	1 mile.
Left chimney of house on Ashland Road... 323	57	..	..	1 mile.

OYSTER.

General locality.—Northwestern shore of upper Chester River about one-eighth mile northeast of Quaker Neck Wharf and one-half mile southwest of entrance to Jarretts Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 20 feet above high water, 8 yards west-northwest of edge of bank, 9 yards north-northwest of edge of bank, 25 yards northeast by north of a cedar tree, 100 yards southwest of low land, and 115 yards east of fence near a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Jarrett" (N 67° 48' E).....	0	00	00	5/8 mile.
Left peak of Bookers Wharf house.....	21	00	..	1 1/8 miles.
Cupola.....	50	14	..	1 mile.
Windmill.....	50	55	..	7/8 mile.
Left chimney of house.....	107	14	..	1 3/8 miles.
Cupola on barn.....	123	50	..	1 3/4 miles.
Nail in blaze in cedar tree (7 inches diameter).....	143	13	30	24.90 meters.
Smoke pipe of wharf house.....	151	03	..	7/8 mile.
Left chimney of house.....	180	43	..	130 yards.
Left chimney of old house on near side of Jarretts Creek.....	277	29	..	3/4 mile.
Chimney of house among trees.....	309	06	..	1 1/4 miles.

STARKLEY.

General locality.—Southeastern shore of upper Chester River, about three-fourths mile east of Quaker Neck Wharf and one-half mile southwest of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in meadow land about 1 foot above high water, 10 yards east by south of shore, 33 yards south of first cut in shore, 140 yards north by west of a fence, 145 yards southwest of point where another fence meets shore, and 275 yards south of large cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Burns" (S 61° 34' W).....	0	00	00	½ mile.
Left chimney of Quaker Neck Wharf house. 39	02	..	..	¾ mile.
Right peak of barn.....	66	43	..	1 mile.
Peak of middle dormer window of large house 114	30	..	..	¾ mile.
Left peak of large house.....	163	49	..	1¼ miles.
Left peak of Bookers Wharf house.....	187	48	..	½ mile.
Large cedar tree.....	191	11	..	275 yards.
Spindle on left cupola of barn.....	262	00	20	½ mile.
Weather vane on barn.....	320	01	50	½ mile.

JARRETT.

General locality.—Northwestern shore of upper Chester River, about five-eighths mile southwest of Melton Point, one-fourth mile east of entrance to Jarretts Creek, and five-eighths mile west of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is about 1 foot above high water, 14 yards north of shore, 50 yards from a short fence at shore, 65 yards west of entrance to slough, and 175 yards from another fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Melton" (N 61° 34' E).....	0	00	00	¾ mile.
Left peak of house on ridge.....	1	35	..	1½ miles.
Right peak of small house.....	47	58	..	¾ mile.
West peak of Bookers Wharf house.....	48	50	..	¾ mile.
Spindle on left cupola on barn.....	96	01	..	¾ mile.
Weather vane on cupola on barn.....	125	48	..	1 mile.
Chimney of house near Indiantown Wharf.. 155	29	..	..	1¾ miles.
Large chimney of Massey brick house.....	169	16	..	1¾ miles.
Smoke pipe of Quaker Neck Wharf house... 182	50	..	..	¾ mile.
Peak of middle dormer window of large house 299	07	..	..	½ mile.

BOOKER.

General locality.—Southeastern shore of upper Chester River, about 175 yards northeast of Bookers Wharf and one-half mile south of Melton Point. (See Chart No. 30.)

Immediate locality.—Observed station is on sanded marsh about 1 foot above high water, 6 yards southeast of shore, 13 yards east by south of a small point, 30 yards southwest by south of locust trees, 125 yards northwest by north of a house on 20-foot bank, and 140 yards northwest of a creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Starkley" (S 67° 55' W).....	0	00	00	¾ mile.
Left chimney of Quaker Neck Wharf house. 17	46	..	..	1½ miles.
Near peak of house in woods.....	53	23	..	¾ mile.
Peak of middle dormer window on left side of house among trees.....	68	05	..	¾ mile.
Chimney of house.....	113	38	..	1 mile.
Nail in blaze in locust tree (4 inches diameter) 182	23	40	..	29.46 meters.
Near peak of house on bank.....	293	48	..	125 yards.
Right peak of Bookers Wharf house.....	350	47	..	175 yards.

JOURNEY.

General locality.—Eastern shore of upper Chester River, opposite Melton Point, about one-half mile northeast of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in cultivated land about 20 feet above high water, 3 yards southeast by east of edge of bank, south of large elm tree, and northeast of several sycamore and locust trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Booker" (S 28° 15' W).....	0	00	00	1/2 mile.
Right peak of Bookers Wharf house.....	4	24	..	1/2 mile.
Smoke pipe of Quaker Neck Wharf house...	41	21	..	1 5/8 miles.
Near peak of house with three dormer windows.....	77	01	..	7/8 mile.
Right chimney of 2 1/2-story house.....	107	02	..	1 1/2 miles.
Nail in blaze in elm tree (10 inches diameter)...	134	27	40	22.70 meters.
Large cedar tree in yard near fence.....	187	30	..	400 yards.
Near peak of old house.....	318	16	..	200 yards.
Nail in blaze in sycamore tree (8 inches diameter).....	355	05	..	21.00 meters.

MELTON.

General locality.—Western shore of upper Chester River, on Melton Point, about one-half mile north of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is about 2 feet above high water, 4 yards south of shore, 40 yards north of shore, 32 yards northwest of extreme end of point, 2 yards northeast of marsh, and 125 yards east-southeast of clump of cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Pomona" (N 53° 38' W).....	0	00	00	5/8 mile.
Right chimney of house on knoll.....	17	17	..	1 1/2 miles.
Right peak of roof of building.....	68	07	..	5/8 mile.
Left chimney of house.....	118	37	..	7/8 mile.
Northwest chimney of house on bank near Bookers Wharf.....	219	20	..	1/2 mile.
Northwest peak of Bookers Wharf house....	226	38	..	1/2 mile..
Smoke pipe of Quaker Neck Wharf house...	296	46	..	1 1/4 miles.
Near chimney of house with dormer windows	346	50	..	5/8 mile.

CAKE.

General locality.—Eastern shore of upper Chester River, about three-eighths mile north of Melton Point and seven-eighths mile north of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in a marsh about 1 foot above high water, 13 yards east-southeast of shore, 35 yards northeast by north of shore, 35 yards northeast of rounded point, 150 yards north-northwest of entrance to a creek, 200 yards south-southwest of buildings, and 300 yards south of a house among trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.

	°	'	"	
"Journey" (S 36° 29' E).....	0	00	00	1½ mile.
Chimney on ell of house to left of trees.....	3	40	..	¾ mile.
Northwest peak of Bookers Wharf house....	38	53	..	¾ mile.
South chimney of near one of twin houses..	142	40	..	¾ mile.
East chimney of brick house among trees on ridge.....	169	16	..	1½ miles.
South peak of building.....	229	41	..	¾ mile.
Large lone tree on ridge.....	299	10	..	¾ mile.
Left chimney of large house.....	324	39	..	¾ mile.

POMONA.

General locality.—Western shore of upper Chester River about five-eighths mile northwest of Melton Point and one-half mile south of entrance to Browns Creek. (See Chart No. 30.)

Immediate locality.—Observed station is among small trees near edge of cultivated field, about 12 feet above high water, 6 yards west of edge of bank, and 8 yards from top of slope to marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Taste" (N 5° 30' W).....	0	00	00	½ mile.
Nail in blaze in locust tree (3 inches diam- eter).....	14	28	20	5.23 meters.
Windmill.....	52	20	30	2 miles.
Right corner of house.....	71	49	..	1¼ miles.
Large lone tree in field.....	93	20	..	1¼ miles.
Left chimney of large house.....	103	47	..	1½ miles.
Ell of house to left of trees.....	126	48	..	1½ miles.
Nail in blaze in locust tree (4 inches diam- eter).....	167	10	50	7.74 meters.
Nail in blaze in cedar tree (8 inches diam- eter).....	196	39	40	12.18 meters.
Large cherry tree.....	277	32	..	300 yards.

BILL.

General locality.—Eastern shore of upper Chester River about three-fourths mile north of Melton Point and nearly opposite Browns Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in grove of elm, ash, and oak trees on north side of a point about 20 feet above high water, 7 yards south-southeast of edge of bank, 30 yards east-northeast of a small house, and 40 yards west-southwest of a fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cake" (S 15° 41' E).....	0	00	00	¾ mile.
Right peak of Bookers Wharf house.....	12	04	..	1¼ miles.
Nail in blaze in elm tree (10 inches diam- eter).....	20	43	40	12.37 meters.
Nail in blaze in elm tree (9 inches diameter).....	69	23	10	9.92 meters.
Nail in blaze in oak tree (24 inches diam- eter).....	129	28	40	2.95 meters.
East chimney of brick house.....	137	29	..	¾ mile.
Peak of sharp roof.....	155	53	..	½ mile.
"Robertson Windmill".....	243	52	40	2¼ miles.
Spindle on peak of house on Rolphs Wharf.....	247	37	40	2¾ miles.
Nail in blaze in tree (8 inches diameter)....	280	24	50	7.60 meters.
Left chimney of house on ridge.....	322	17	..	¾ mile.
Nail in blaze in tree (15 inches diameter)...	343	25	10	12.30 meters.
Chimney on ell of house.....	349	32	..	1 mile.

TASTE.

General locality.—Western shore of upper Chester River on point at east side of entrance to Browns Creek, about 1 mile northwest of Melton Point. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point between Chester River and Browns Creek, about 5 yards north of shore of Chester River, 30 yards south of shore of Browns Creek, 50 yards southwest of point of shore of Browns Creek, and 55 yards west-southwest of cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Make" (N 52° 14' E).....	0	00	00	3½ mile.
Windmill.....	7	11	30	1¾ miles.
Chimney of house.....	25	20	..	1¾ miles.
Left chimney of house on ridge.....	68	58	..	1¾ miles.
Chimney on ell of house.....	84	20	..	1¾ miles.
West chimney of left one of twin houses....	142	19	..	¾ mile.
Right chimney of brick house.....	266	13	..	¾ mile.
Largest cedar tree in clump (15 inches diameter).....	350	28	..	54 yards.

MAKE.

General locality.—Western shore of upper Chester River about 1½ miles north of Melton Point and three-eighths mile northeast of entrance to Browns Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in a pasture land, about 2 feet above high water, 10 yards north of shore, 110 yards west of tangent of point of curve of shore, and 325 yards southeast of farm buildings behind trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Broad" (N 61° 13' E).....	0	00	00	½ mile.
Windmill.....	0	22	30	1½ miles.
Near peak of canning house at Wilmers				
Wharf.....	18	26	..	1¾ miles.
Chimney on ell of house on ridge.....	45	45	..	1¾ miles.
Left chimney of house on ridge.....	80	05	..	1½ miles.
Spindle on cupola on barn.....	118	55	..	2¼ miles.
Left chimney of left one of twin houses....	155	18	..	¾ mile.
West chimney of house.....	227	30	..	1 mile.
South peak of building in woods.....	307	04	..	1 mile.

DOWN.

General locality.—Southeastern shore of upper Chester River about 2 miles southwest of entrance to Southeast Creek and 1 mile east of entrance to Browns Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a small rounded point of sanded marsh, about 1 foot above high water, 5 yards south of shore, 40 yards east by south of an inlet, and 95 yards west of a fence beyond trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bill" (S 73° 52' W)	0	00	00	1/2 mile.
East peak of large barn	33	37	..	1 mile.
Chimney of house	75	53	..	1 1/2 miles.
"Robertson Windmill"	138	57	20	1 mile.
Right peak of small house near Rolphs Wharf	153	54	..	2 1/4 miles.
Left peak of taller of two barns	197	17	..	1/2 mile.
Nail in blaze in cedar tree (5 inches diameter)	232	06	10	52.50 meters.
Nail in blaze in cedar tree (5 inches diameter)	253	25	40	47.18 meters.
Nail in blaze in pear tree (3 inches diameter)	348	29	50	14.34 meters.

JULIUS.

General locality.—Southeastern shore of upper Chester River about one-half mile southwest of Wilmers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a sanded grass point fringed by cedar trees and about 2 yards south of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Down" (S 56° 12' W)	0	00	00	1/2 mile.
Chimney of left one of twin houses	10	37	..	1 1/2 miles.
Near peak of large barn	37	29	..	1 mile.
Middle one of three large trees	39	50	..	3/8 mile.
"Robertson Windmill"	130	23	30	1 1/4 miles.
South chimney of house at Rolphs Wharf	165	38	..	1 3/4 miles.
Weather vane on large barn	176	18	..	1 1/4 miles.
Northwest peak of Wilmers Wharf cannery	187	53	..	3/8 mile.
Nail in blaze in cedar tree (8 inches diameter)	198	52	..	4.77 meters.
Nail in blaze in cedar tree (8 inches diameter)	318	06	20	4.30 meters.
Nail in blaze in cedar tree (9 inches diameter)	345	21	..	13.11 meters.

BROAD.

General locality.—Northwestern side of upper Chester River, on an island at entrance to Broad Creek, about 1 mile northeast of entrance to Browns Creek. (See progress map.)

Immediate locality.—Observed station is on western end of a marsh island, about 9 yards north of shore, 43 yards south of shore, and 52 yards east-southeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Nils" (N 80° 24' E)	0	00	00	1/2 mile.
Near peak of cannery	7	17	..	1 3/8 miles.
Chimney on ell of house on ridge	51	09	..	2 1/4 miles.
Right peak of barn	98	26	..	1 mile.
Peak of middle dormer window of large house	132	08	..	1 1/2 miles.
East peak of large barn to left of large tree	190	34	..	1 mile.
"Robertson Windmill"	341	25	30	1 1/2 miles.

NILES.

General locality.—Northwestern shore of upper Chester River, about three-fourths mile west of entrance to Southeast Creek and one-half mile east of an island at entrance to Broad Creek. (See progress map.)

Immediate locality.—Observed station is in edge of cultivated field, about 5 feet above high water, 4 yards north of shore, 110 yards east by south of tangent of point of curve of shore, and 450 yards southwest of a house and windmill.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Robertson" (N 59° 04' E).....	0	00	00	1/2 mile.
Weather vane on southwest peak of largest				
barn on ridge.....	10	46		1 1/2 miles.
North peak of Wilmers Wharf cannery.....	37	03		1/2 mile.
Chimney of house near Wilmers Wharf.....	41	52		1/2 mile.
West chimney of large house on ridge.....	133	32		1 mile.
Near peak of roof of house on hill.....	158	22		1 mile.
"Robertson Windmill".....	336	55		1/2 mile.

WILMERS.

General locality.—Southeastern shore of upper Chester River on southwest side of entrance to Southeast Creek, about 175 yards northeast of Wilmers Wharf. (See progress map.)

Immediate locality.—Observed station is on a sanded grass point between river and marsh, about 3 feet above high water, 7 yards east of shore, 5 yards southwest of shore, and 6 yards southeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Julius" (S 60° 34' W).....	0	00	00	1/2 mile.
Chimney on near one of twin houses.....	4	58		2 1/8 miles.
East peak of large barn.....	27	14		1 1/2 miles.
"Robertson Windmill".....	74	00	30	5/8 mile.
Cupola on Robertson barn.....	83	23		1/2 mile.
Flagpole on Rolphs Wharf.....	154	06	20	1 1/4 miles.
Weather vane on large barn.....	169	23		1 1/2 miles.
Cupola on barn.....	212	59		300 yards.
Cupola on barn.....	284	57		5/8 mile.
Right peak of Wilmers Wharf cannery.....	348	26		175 yards.

ROBERTSON WINDMILL.

General locality.—Northwestern side of upper Chester River opposite entrance to Southeast Creek, about 1 1/4 miles southeast of Rolphs Wharf. (See progress map.)

Immediate locality.—Observed station is on windmill on high tower in rear of house.

Marks.—Observed station is center point of windmill.

References.—None necessary.

ROBERTSON.

General locality.—Northwestern shore of upper Chester River near Riverside Wharf opposite entrance to Southeast Creek. (See Progress map.)

Immediate locality.—Observed station is about 2 feet above high water, 5 yards northwest of shore, 45 yards northeast of shore end of a wharf, and 100 yards southwest of a point of land.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Thorsten" (N 52° 00' E).....	0	00	00	5/8 mile.
Weathervane on large barn.....	9	30	.....	1 3/4 miles.
Cupola on old barn.....	50	31	.....	1 1/2 miles.
Chimney of house near Wilmers Wharf.....	97	11	.....	3/8 mile.
Pinnacle on cupola on barn.....	105	15	.....	1/2 mile.
Northwest peak of cannery.....	117	41	.....	1/4 mile.
Weathervane on cupola on barn.....	256	15	20	1/4 mile.
Spindle on cupola on another barn.....	260	56	.....	1/4 mile.
Spindle on peak of Rolphs lower wharf house	359	29	.....	1 1/4 miles.

SOUTHEAST.

General locality.—Southeastern shore of upper Chester River on Deep Point at northeastern side of entrance to Southeast Creek about three-fourths mile south-southwest of Rolphs Wharf and one-half mile northeast of Wilmers Wharf. (See Progress map.)

Immediate locality.—Observed station is on cultivated land about 15 feet above high water, 19 yards south of edge of bank, 21 yards east by north of edge of bank, and 27 yards east by south of extreme point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Wilmers'" (S 57° 46' W).....	0	00	00	1/2 mile.
Right tangent of Wilmers Wharf.....	2	57	.....	1/2 mile.
"Robertson Windmill".....	34	41	20	3/4 mile.
Spindle on cupola on barn.....	38	02	.....	3/4 mile.
Weathervane on cupola on barn.....	38	32	.....	3/4 mile.
Near peak of long, small shanty.....	118	31	.....	2 miles.
Left peak of large barn.....	134	39	.....	1 1/4 miles.
Flagstaff on Rolphs Wharf house.....	140	54	10	3/8 mile.
Right peak of long barn.....	191	46	.....	3/4 mile.
Lightning-rod between two chimneys on house.....	248	51	.....	3/8 mile.
Right peak of Wilmers Wharf cannery	358	34	.....	5/8 mile.

THORSTEN.

General locality.—Northwestern shore of upper Chester River about three-fourths mile northeast of Wilmers Wharf and one-half mile north of entrance to Southeast Creek. (See Progress map.)

Immediate locality.—Observed station is about 3 feet above high water, 12 yards northwest of shore, 10 yards northeast of short fence, and 4 yards southeast of lone cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Blank" (N 19° 37' E).....	0	00	00	3½ mile.
Northwest peak of large barn.....	4	34	..	1¼ miles.
Northwest peak of large barn.....	21	09	..	1 mile.
Flagstaff on Rolphs Wharf.....	23	33	..	5⁄8 mile.
Weathervane on very large barn.....	48	01	..	1¼ miles.
West peak of barn behind wharf.....	81	03	..	1 mile.
Lightning rod to right of two chimneys of house.....	111	15	..	1¾ miles.
Nail in blaze in fence post.....	115	15	30	8.85 meters.
Top point of roof of large brick house on ridge.....	135	05	40	2¼ miles.
Spindle on cupola on left one of two barns at Wilmers Wharf.....	177	08	40	¾ mile.
Northwest peak of Wilmers Wharf cannery..	190	15	..	¾ mile.
Nail in blaze in cedar tree (10 inches diameter).....	279	43	30	3.40 meters.

BLANK.

General locality.—Northwestern shore of upper Chester River about one-fourth mile west of Rolphs Wharf and three-fourths mile north of entrance to Southeast Creek. (See Progress map.)

Immediate locality.—Observed station is on a grassy point about 2 feet above high water, 7 yards west of shore, 9 yards north of shore, 8 yards northwest of extreme end of point, and 40 yards from a dense clump of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Rolphs" (N 82° 37' E).....	0	00	00	¼ mile.
Weathervane on wharf house.....	10	19	..	¼ mile.
Left peak of wharf house.....	71	30	..	½ mile.
Left peak of small house among trees.....	104	28	30	1¾ miles.
Spindle on barn cupola.....	115	06	..	1¾ miles.
Peak of middle dormer window of house....	271	38	..	1¼ miles.
Peak of large barn.....	333	25	..	5⁄8 mile.
Flagstaff on Rolphs Wharf house.....	356	27	..	¼ mile.

ROLPHS.

General locality.—Eastern shore of upper Chester River about 100 yards southeast of Rolphs Wharf and three-fourths mile north of entrance to Southeast Creek. (See Progress map.)

Immediate locality.—Observed station is on a grass bank between two large willow trees about 6 feet above high water, 5 yards northeast of shore, 19 yards south-southwest of side gate to yard, and 7 yards southwest of a road 3 feet higher than observed station.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Southeast" (S 22° 53' W).....	0	00	00	¾ mile.
Peak of Wilmers Wharf cannery.....	15	06	..	1¼ miles.
Flagstaff on Rolphs Wharf.....	76	59	..	100 yards.
Nail in blaze in willow tree (24 inches diameter).....	88	06	20	7. 16 meters.
Chimney on ell of Story house.....	151	36	..	53 yards.
Nail in blaze in willow tree (27 inches diameter).....	220	31	10	13. 96 meters.
Chimney on ell of Story house.....	261	56	..	120 yards.
Nail in blaze in willow tree (25 inches diameter).....	309	26	40	8. 51 meters.
Weathervane on middle of lower wharf house.....	347	42	..	100 yards.

BOUNDARIES OF OYSTER BARS.

EXPLANATION.

The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the designation and employment by the Department of Commerce and Labor of such officers, experts, and other technically qualified persons "as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland." The oyster laws of Maryland provide that the Maryland Shell Fish Commissioners, with the aid of such persons as may be designated by the Government, shall proceed "to have laid out, surveyed, and designated on the said charts the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts." The oyster laws of Maryland also provide in another section that there shall "be made a true and accurate survey of the natural oyster beds, bars, and rocks * * * with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey."

Under the provisions of the laws quoted above the State of Maryland, in cooperation with the Department of Commerce and Labor, must define the boundaries of the natural oyster bars "as accurately as practicable" and also "with reference to fixed and permanent objects on the shore, giving courses and distances." The requirement of "as accurately as practicable" is easily fulfilled by definition of the location of the corners of the oyster bars by latitude and longitude. In fact, this method is probably the most satisfactory and accurate one that could be used for all purposes of legal definition or for relocation of the oyster-bar boundaries by competent engineers. Therefore the additional requirement of "giving courses and distances" is superfluous and is only fulfilled in the published definitions on account of the specific provisions of the law making it compulsory. This part of the description of boundaries has involved an immense amount of extra computations in order to prevent technical discrepancies between the latitude and longitude of a corner of an oyster bar and its distance and bearing from objects on shore of known latitude and longitude without adding anything to the accuracy and very little to the convenience of practical use of the descriptions of the oyster-bar boundaries.

As provided by law the boundaries of the oyster bars are all straight lines, but in the work already completed they have inclosed areas of all shapes from triangles to

complicated 14-sided figures, and of all sizes from 4 acres to 7,548 acres. The sizes have varied in length from 93 to 7,529 yards, and in some cases the corners of the boundaries have been practically at the triangulation stations from which they are located, while in other instances they were over 13,600 yards from the landmarks most available for the purpose of fixing their position.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made and the magnitude of the work with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and great importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the Commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and the future.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in each county.

Title.—At the top of each tabular form is given the legal name of the oyster bar to be described, and the one by which it is known and designated in the published oyster records and on the oyster charts. The adopted name of the oyster bar is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission; and when there was no local name in common use a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the oyster bar was located.

Underneath the name, in parentheses, is given the general locality of the oyster bar and the serial number of the Maryland Oyster Chart on which its legal boundaries are shown.¹

First column.—This column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar. Where a corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars, only the number of the corner of the oyster bar being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definition of the location of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

of the survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"¹ and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"² gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars: one, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

(1) *Triangulation.*—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those not familiar

¹ The mean magnetic variation for Kent County was 6° 15' west of north in 1911 and increasing at the rate of 5' yearly.

² Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant, the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "Phoenix Shoal" oyster bar, which is the first one described in this publication, and assume that "Corner No. 3," is to be examined as to its position. The angle between the two landmarks "Worton Point 2" and "Pooles Island 2" as determined from right to left from the forward bearings from this corner is $132^{\circ} 04'$ and the angle between "Pooles Island 2" and "Bramble" is $68^{\circ} 13'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The

second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant then the other until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic location of a point is attained. In fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the Commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State fishery force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer can take compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,¹ and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks, for which the bearings are published, have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used. This can be done by getting their bearings directly from the chart by parallel rulers or a protractor and then applying these new bearings in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fifth column of the tables opposite the "corner" in question. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.* This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

¹ The mean magnetic variation for Kent County is 6° 15' west of north in 1911 and increasing at the rate of 5' yearly.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

PHOENIX SHOAL.

(Chesapeake Bay—Chart No. 28.)

Corner of bar	Latitude ° ' "	Longitude ° ' "	True bearing		Distance Yards.	U. S. C' & G. S. triangulation station
			Forward	Back		
1	39 17 05.86	76 12 43.06	N 30 43 E	S 30 44 W	4821	Worton Point 2.
			N 86 00 W	S 86 01 E	4792	Pooles Island 2.
			S 16 23 W	N 16 23 E	3737	Bramble.
2	39 17 09.44	76 12 52.05	N 33 37 E	S 33 38 W	4830	Worton Point 2.
			N 87 17 W	S 87 18 E	4574	Pooles Island 2.
			S 12 48 W	N 12 48 E	3800	Bramble.
3	39 17 32.06	76 12 37.70	N 35 26 E	S 35 27 W	3964	Worton Point 2.
			S 83 22 W	N 83 20 E	4978	Pooles Island 2.
			S 15 09 W	N 15 09 E	4661	Bramble.
4	39 17 29.68	76 12 28.86	N 31 35 E	S 31 36 W	3945	Worton Point 2.
			S 85 05 W	N 85 03 E	5105	Pooles Island 2.
			S 18 23 W	N 18 22 E	4602	Bramble.

DEEP SHOAL.

(Chesapeake Bay—Chart No. 28.)

1	39 14 46.00	76 13 47.63	N 28 31 E	S 28 31 W	1288	Bramble.
			N 31 37 W	S 31 38 E	5935	Pooles Island 2.
			S 18 29 W	N 18 29 E	2754	Mitchells Bluff 2.
2	39 14 47.95	76 14 00.80	N 42 01 E	S 42 01 W	1435	Bramble.
			N 20 01 W	S 20 02 E	5794	Pooles Island 2.
			S 11 09 W	N 11 09 E	2729	Mitchells Bluff 2.
3	39 15 10.80	76 13 54.11	S 10 30 W	N 10 30 E	5815	Mitchells Bluff 2.
			S 89 26 E	N 89 26 W	793	Bramble.
			N 36 50 W	S 36 51 E	4895	Pooles Island 2.
4	39 15 15.75	76 13 37.10	S 17 38 W	N 17 38 E	3793	Mitchells Bluff 2.
			N 69 12 E	S 69 12 W	393	Bramble.
			N 39 54 W	S 39 55 E	5281	Pooles Island 2.

COAL LUMP.

(Chesapeake Bay—Chart No. 28.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 14 38.93	76 14 47.98	S 16 40 E	N 16 40 W	2477	Mitchells Bluff 2.
			N 58 03 E	S 58 03 W	2591	Bramble.
			N 16 07 W	S 16 08 E	5508	Pooles Island 2.
2	39 14 39.91	76 15 05.52	S 25 57 E	N 25 56 W	2675	Mitchells Bluff 2.
			N 63 17 E	S 63 18 W	2975	Bramble.
			N 11 30 W	S 11 30 E	5366	Pooles Island 2.
3	39 15 26.40	76 15 15.75	S 19 54 E	N 19 54 W	4226	Mitchells Bluff 2.
			S 85 30 E	N 85 31 W	2035	Bramble.
			N 12 16 W	S 12 16 E	3776	Pooles Island 2.
4	39 15 22.30	76 14 41.05	S 7 51 E	N 7 50 W	3871	Mitchells Bluff 2.
			S 87 24 E	N 87 23 W	2018	Bramble.
			N 24 05 W	S 24 06 E	4195	Pooles Island 2.

GALES LUMPS.

(Chesapeake Bay—Chart No. 28.)

1	39 11 37.54	76 19 11.77	N 58 42 W	S 58 44 E	8263	Craighill Channel Light (Rear Range).
			S 61 08 W	N 61 04 E	9640	Seven Foot Knoll Light.
			S 31 43 E	N 31 41 W	7304	Swan Point 3.
2	39 14 19.47	76 17 12.25	N 20 44 E	S 20 45 W	6360	Pooles Island 2.
			S 83 26 W	N 83 20 E	10261	Craighill Channel Light (Rear Range).
			S 3 26 E	N 3 26 W	11697	Swan Point 3.
3	39 13 33.60	76 16 24.20	S 3 10 W	N 3 10 E	10144	Swan Point 3.
			S 87 01 E	N 87 00 W	3239	Mitchells Bluff 2.
			N 7 32 E	S 7 33 W	7561	Pooles Island 2.
4	39 12 56.97	76 17 19.57	S 5 44 E	N 5 44 W	8938	Swan Point 3.
			N 77 08 E	S 77 10 W	4797	Mitchells Bluff 2.
			N 15 38 E	S 15 39 W	9066	Pooles Island 2.
5	39 12 07.50	76 16 48.30	S 0 34 E	N 0 34 W	7227	Swan Point 3.
			N 54 43 E	S 54 45 W	4736	Mitchells Bluff 2.
			N 8 52 E	S 8 53 W	10526	Pooles Island 2.

MITCHELLS BLUFF BUOY.

(Chesapeake Bay—Chart No. 28.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "		
1	39 12 46.80	76 16 23.97	N 6 12 E	S 6 12 W	Yards. 9127	Pooles Island 2.
			N 80 20 W	S 80 24 E	11626	Craighill Channel Light (Rear Range).
			S 75 33 W	N 75 29 E	11841	Craighill Channel Light (Front Range).
2	39 12 58.32	76 16 28.50	N 7 15 E	S 7 15 W	8755	Pooles Island 2.
			N 82 09 W	S 82 14 E	11449	Craighill Channel Light (Rear Range).
			S 73 35 W	N 73 31 E	11829	Craighill Channel Light (Front Range).
3	39 13 11.93	76 15 50.42	N 0 45 E	S 0 45 W	8226	Pooles Island 2.
			N 84 53 W	S 84 57 E	12390	Craighill Channel Light (Rear Range).
			S 72 53 W	N 72 48 E	12918	Craighill Channel Light (Front Range).
4	39 13 00.00	76 15 45.28	N 0 11 W	S 0 11 E	8621	Pooles Island 2.
			N 83 06 W	S 83 11 E	12567	Craighill Channel Light (Rear Range).
			S 74 46 W	N 74 41 E	12936	Craighill Channel Light (Front Range).

TOLCHESTER LUMP.

(Chesapeake Bay—Chart No. 28.)

1	39 12 52.81	76 14 51.48	N 33 37 E	S 33 37 W	1448	Mitchells Bluff 2.
			N 9 13 W	S 9 13 E	8985	Pooles Island 2.
			N 82 48 W	S 82 54 E	13996	Craighill Channel Light (Rear Range).
2	39 12 55.41	76 15 00.00	N 42 31 E	S 42 31 W	1517	Mitchells Bluff 2.
			N 7 53 W	S 7 53 E	8865	Pooles Island 2.
			N 83 03 W	S 83 09 E	13764	Craighill Channel Light (Rear Range).
3	39 13 18.14	76 14 49.58	N 64 55 E	S 64 55 W	830	Mitchells Bluff 2.
			N 10 31 W	S 10 32 E	8153	Pooles Island 2.
			N 86 19 W	S 86 24 E	13965	Craighill Channel Light (Rear Range).
4	39 13 15.80	76 14 41.60	N 51 33 E	S 51 33 W	693	Mitchells Bluff 2.
			N 11 50 W	S 11 51 E	8270	Pooles Island 2.
			N 86 03 W	S 86 08 E	14180	Craighill Channel Light (Rear Range).

HODGES.

(Chesapeake Bay—Chart No. 28.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 10 21.87	76 16 48.10	N 57 43 W	S 57 47 E	12807	Craighill Channel Light (Rear Range).
			S 80 15 W	N 80 10 E	12393	Seven Foot Knoll Light.
			S 1 02 E	N 1 02 W	3664	Swan Point 3.
2	39 11 00.00	76 16 53.07	N 62 34 W	S 62 38 E	12053	Craighill Channel Light (Rear Range).
			N 86 33 W	S 86 37 E	10697	Craighill Channel Light (Front Range).
			S 66 30 W	N 66 25 E	14762	Bodkin Point (Old Tower).
3	39 11 31.73	76 15 34.17	N 1 35 W	S 1 35 E	11610	Pooles Island 2.
			N 70 38 W	S 70 43 E	13532	Craighill Channel Light (Rear Range).
			S 72 32 W	N 72 27 E	14839	Seven Foot Knoll Light.
4	39 10 53.01	76 16 06.10	N 2 18 E	S 2 18 W	12922	Pooles Island 2.
			N 64 06 W	S 64 11 E	13261	Craighill Channel Light (Rear Range).
			S 76 42 W	N 76 37 E	13684	Seven Foot Knoll Light.
5	39 10 45.70	76 16 34.24	N 61 39 W	S 61 44 E	12715	Craighill Channel Light (Rear Range).
			N 84 14 W	S 84 19 E	11253	Craighill Channel Light (Front Range).
			S 68 56 W	N 68 51 E	15036	Bodkin Point (Old Tower).

SWAN POINT.

(Chesapeake Bay—Charts Nos. 28 and 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 05 39.09	76 16 48.20	S 23 51 E N 47 48 E N 0 40 E	N 24 00 W S 47 49 W S 0 40 W	8732 4158 5875	Wickes Beach. Stevens. Swan Point 3.
2	39 07 20.67	76 17 51.73	N 35 21 E N 48 44 W N 82 50 W	S 35 22 W S 48 47 E S 82 54 E	3002 12192 12102	Swan Point 3. Craighill Channel Light (Front Range). Bodkin Point (Old Tower).
3	39 07 25.11	76 19 00.00	N 56 55 E N 43 03 W N 82 25 W	S 56 57 W S 43 06 E S 82 29 E	4213 10797 10293	Swan Point 3. Craighill Channel Light (Front Range). Bodkin Point (Old Tower).
4	39 08 50.00	76 19 00.00	N 36 34 W N 55 42 W S 81 36 W	S 36 37 E S 55 45 E N 81 32 E	12369 8922 10314	Craighill Channel Light (Rear Range). Craighill Channel Light (Front Range). Bodkin Point (Old Tower).
5	39 10 25.76	76 17 01.90	N 57 20 W S 79 21 W S 6 27 E	S 57 25 E N 79 16 E N 6 27 W	12431 12059 3818	Craighill Channel Light (Rear Range). Seven Foot Knoll Light. Swan Point 3.
6	39 10 21.87	76 16 48.10	N 57 43 W S 80 15 W S 1 02 E	S 57 47 E N 80 10 E N 1 02 W	12807 12393 3064	Craighill Channel Light (Rear Range). Seven Foot Knoll Light. Swan Point 3.
7	39 08 24.73	76 17 29.16	N 42 06 W S 86 58 W S 4 15 E	S 42 10 E N 87 03 E N 4 15 W	14543 12607 10116	Craighill Channel Light (Rear Range). Bodkin Point (Old Tower). Love Point Light.
8	39 08 05.36	76 17 05.35	N 74 27 E N 28 53 E N 89 59 W	S 74 28 W S 28 53 W N 89 56 E	2301 1075 13214	Gratitude. Swan Point 3. Bodkin Point (Old Tower).
9	39 07 51.73	76 17 20.18	N 67 33 E N 32 58 E N 87 56 W	S 67 34 W S 32 59 W S 88 01 E	2819 1670 12833	Gratitude. Swan Point 3. Bodkin Point (Old Tower).
10	39 06 46.38	76 17 02.03	S 0 19 E N 81 21 E N 6 50 E	N 0 19 W S 81 22 W S 6 50 W	6756 3483 3631	Love Point Light. Stevens. Swan Point 3.
11	39 06 41.57	76 16 21.77	S 8 47 W N 73 58 E N 9 26 W	N 8 48 E S 73 59 W S 9 26 E	6687 2483 3819	Love Point Light. Stevens. Swan Point 3.

Survey of Oyster Bars, Kent County, Md.

SWAN CREEK.

(Swan Creek—Chart No. 28.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 09 09.48	76 15 15.10	S 42 10 W N 57 02 W N 28 28 W	N 42 18 E S 57 02 E S 28 29 E	338 431 770	Fork. Elliason. Urie.
2	39 09 10.05	76 15 25.67	S 72 32 E N 40 11 E N 7 45 W	N 72 31 W S 40 11 W S 7 45 E	480 408 664	Rail. Spike. Urie.
3	39 09 13.10	76 15 27.13	S 42 41 E N 55 18 E N 25 47 E	N 42 41 W S 55 18 W S 25 47 W	1033 367 706	Haven. Spike. Corr.
4	39 09 12.78	76 15 15.30	S 31 35 W N 70 56 W N 32 37 W	N 31 35 E S 70 56 E S 32 37 E	423 377 671	Fork. Elliason. Urie.

ROCKHALL.

(Swan Creek—Charts Nos. 28 and 29.)

1	39 08 53.00	76 15 02.98	N 17 48 W N 60 41 W S 74 00 W	S 17 48 E S 60 42 E N 74 00 E	453 626 1020	Rail. Fork. Orchard.
2	39 08 54.20	76 15 14.33	N 22 14 E N 42 57 W S 64 46 W	S 22 14 W S 42 57 E N 64 46 E	422 363 755	Rail. Fork. Orchard.
3	39 08 58.57	76 15 05.23	N 18 04 W N 76 10 W S 63 02 W	S 18 04 E S 76 10 E N 63 01 E	256 501 1035	Rail. Fork. Orchard.

WHITE HORSE.

(Swan Creek—Chart Nos. 28 and 29.)

1	39 08 44.82	76 15 18.15	N 20 12 E N 14 11 W S 89 28 W	S 20 12 W S 14 11 E N 89 28 E	754 600 583	Rail. Fork. Orchard.
2	39 08 51.58	76 15 19.85	S 86 15 E N 16 08 W S 66 33 W	N 86 15 W S 16 08 E N 66 32 E	510 360 586	Haven. Fork. Orchard.
3	39 08 54.20	76 15 14.33	N 22 14 E N 42 57 W S 64 46 W	S 22 14 W S 42 57 E N 64 46 E	422 363 755	Rail. Fork. Orchard.
4	39 08 48.40	76 15 12.32	N 76 30 E N 33 03 W S 80 16 W	S 76 39 W S 33 03 E N 80 16 E	320 550 746	Haven. Fork. Orchard.
5	39 08 47.37	76 15 15.93	N 75 02 E N 22 29 W S 81 53 W	S 75 02 W S 22 29 E N 81 53 E	420 537 647	Haven. Fork. Orchard.

THE HAVEN.

(Swan Creek—Charts Nos. 28 and 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 08 38.00	76 15 02.73	N 7 57 E	S 7 57 W	429	Haven.
			N 8 48 W	S 8 48 E	946	Rail.
			N 34 12 W	S 34 12 E	982	Fork.
2	39 08 43.86	76 15 11.20	N 51 09 E	S 51 09 W	362	Haven.
			N 5 59 E	S 6 00 W	744	Rail.
			N 16 57 W	S 16 57 E	1611	Urie.
3	39 08 46.15	76 15 08.73	N 55 23 E	S 55 23 W	264	Haven.
			N 1 05 E	S 1 05 W	662	Rail.
			N 27 23 W	S 27 23 E	1149	Elliason.
4	39 08 41.23	76 15 00.77	N 1 26 E	S 1 26 W	316	Haven.
			N 40 38 W	S 40 38 E	027	Fork.
			N 64 17 W	S 64 17 E	402	Treasure.

DEEP LANDING HOLE.

(Swan Creek—Charts Nos. 28 and 29.)

1	39 08 46.24	76 15 45.56	S 71 21 W	N 71 21 E	616	Bank.
			S 9 02 E	N 9 02 W	772	Gratitude.
			N 46 13 W	S 46 13 E	588	Tavern.
2	39 08 49.37	76 15 44.33	S 63 51 W	N 63 51 E	687	Bank.
			S 5 50 E	N 5 50 W	872	Gratitude.
			N 56 35 W	S 56 35 E	548	Tavern.
3	39 08 49.39	76 15 36.27	S 33 46 W	N 33 46 E	191	Orchard.
			N 65 47 W	S 65 47 E	733	Tavern.
			N 53 05 E	S 53 05 W	921	Rail.
4	39 08 46.71	76 15 36.40	N 48 59 E	S 48 59 W	980	Rail.
			N 59 32 W	S 59 33 E	772	Tavern.
			S 75 32 W	N 75 31 E	852	Bank.

LITTLE NECK.

(Swan Creek—Charts Nos. 28 and 29.)

1	39 08 14.80	76 16 02.94	N 62 42 E	S 62 42 W	650	Gratitude.
			N 8 24 W	S 8 24 E	873	Bank.
			N 60 55 W	S 60 55 E	1282	Swan Point 3.
2	39 08 28.87	76 16 01.60	S 71 59 E	N 71 59 W	571	Gratitude.
			N 22 41 W	S 22 41 E	421	Bank.
			N 82 41 W	S 82 41 E	1165	Swan Point 3.
3	39 08 38.08	76 15 46.39	N 35 39 E	S 35 39 W	273	Orchard.
			N 82 04 W	S 82 05 E	568	Bank.
			S 16 21 E	N 16 21 W	507	Gratitude.
4	39 08 35.73	76 15 44.00	N 17 45 E	S 17 45 W	316	Orchard.
			N 75 51 W	S 75 51 E	644	Bank.
			S 11 07 E	N 11 07 W	416	Gratitude.

Survey of Oyster Bars, Kent County, Md.

TAVERN CREEK.

(Tavern Creek—Charts Nos. 28 and 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 08 27.51	76 16 11.76	S 80 50 E N 13 29 E N 77 40 W	N 80 50 W S 13 29 W S 77 40 E	819 447 909	Gratitude. Bank. Swan Point 3.
2	39 08 30.27	76 16 15.46	S 76 09 E N 30 31 E N 82 43 W	N 76 08 W S 30 32 W S 82 43 E	934 397 797	Gratitude. Bank. Swan Point 3.
3	39 08 40.79	76 16 02.68	S 44 37 E N 77 28 E N 2 25 E	N 44 37 W S 77 28 W S 2 25 W	812 602 592	Gratitude. Orchard. Tavern.
4	39 08 38.68	76 15 59.86	S 44 24 E N 68 32 E N 4 15 W	N 44 24 W S 68 32 W S 4 15 E	710 551 664	Gratitude. Orchard. Tavern.

WINDMILL FLATS.

(Entrance Rockhall Harbor—Chart No. 29.)

1	39 07 43.39	76 15 55.17	S 50 19 E N 66 52 E N 38 12 W	N 50 19 W S 66 52 W S 38 13 E	2192 1344 2140	Stevens. Windmill Point. Swan Point 3.
2	39 08 05.75	76 16 00.56	S 40 20 E N 40 28 E N 51 52 W	N 40 19 W S 40 20 W S 51 53 E	2825 793 1504	Stevens. Gratitude. Swan Point 3.
3	39 08 08.86	76 15 40.29	S 68 37 E N 2 00 W N 64 21 W	N 68 37 W S 2 00 E S 64 22 E	908 499 1902	Windmill Point. Gratitude. Swan Point 3.
4	39 07 55.20	76 15 15.66	S 19 51 E N 56 43 E N 34 42 W	N 19 51 W S 56 43 W S 34 43 E	1912 237 1167	Stevens. Windmill Point. Gratitude.

MUDDY DRAIN.

(Entrance Rockhall Harbor—Chart No. 29.)

1	39 07 11.20	76 15 47.38	S 78 02 E N 32 35 E N 28 55 W	N 78 02 W S 32 36 W S 28 55 E	1515 1915 3162	Stevens. Windmill Point. Swan Point 3.
2	39 07 20.43	76 16 10.52	S 73 22 E N 51 32 E N 20 33 W	N 73 21 W S 51 33 W S 20 33 E	2182 2094 2624	Stevens. Windmill Point. Swan Point 3.
3	39 08 01.67	76 16 23.83	S 50 26 E N 56 40 E N 28 12 W	N 50 25 W S 56 40 W S 28 12 E	3165 1348 1210	Stevens. Gratitude. Swan Point 3.
4	39 08 05.75	76 16 00.56	S 40 20 E N 40 29 E N 51 52 W	N 40 19 W S 40 29 W S 51 53 E	2825 793 1504	Stevens. Gratitude. Swan Point 3.

HUNTINGFIELD.

(Entrance Rockhall Harbor—Chart No. 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	39 07 03.80	76 15 28.48	S 86 16 E N 16 01 E N 33 52 W	N 86 15 W S 16 01 W S 33 53 E	988 1939 3634	Stevens. Windmill Point. Swan Point 3.
2	39 07 11.20	76 15 47.38	S 78 02 E N 32 35 E N 28 55 W	N 78 02 W S 32 36 W S 28 55 E	1515 1915 3162	Stevens. Windmill Point. Swan Point 3.
3	39 07 43.39	76 15 55.17	S 50 19 E N 66 52 E N 38 12 W	N 50 19 W S 66 52 W S 38 13 E	2192 1344 2140	Stevens. Windmill Point. Swan Point 3.
4	39 07 55.20	76 15 15.66	S 19 51 E N 56 43 E N 34 42 W	N 19 51 W S 56 43 W S 34 43 E	1912 237 1167	Stevens. Windmill Point. Gratitude.
5	39 07 45.55	76 14 58.40	N 44 34 W N 60 14 W S 7 33 E	S 44 35 E S 60 15 E N 7 33 W	2597 3243 1485	Bank. Swan Point 3. Stevens.
6	39 07 15.96	76 14 57.43	N 10 56 W N 47 27 W S 22 38 W	S 10 56 E S 47 26 E N 22 37 E	1480 3856 8476	Windmill Point. Swan Point 3. Love Point Light.

GUM SPRING.

(Entrance Chester River—Chart No. 29.)

1	39 06 18.23	76 15 01.87	N 11 00 E N 30 53 W S 28 12 W	S 11 00 W S 30 54 E N 28 11 E	1500 5306 6605	Stevens. Swan Point 3. Love Point Light.
2	39 06 34.48	76 15 26.56	N 45 20 E N 9 39 E N 27 23 W	S 45 20 W S 9 39 W S 27 24 E	1315 2893 4512	Stevens. Windmill Point. Swan Point 3.
3	39 07 01.33	76 15 09.20	N 87 45 E N 0 51 E N 39 13 W	S 87 45 W S 0 51 W S 39 14 E	479 1947 4003	Stevens. Windmill Point. Swan Point 3.

Survey of Oyster Bars, Kent County, Md.

WHITE MARSH.

(Entrance Chester River—Chart No. 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 04 59.92	76 14 11.55	N 14 08 W N 29 21 W S 54 25 W	S 14 08 E S 29 22 E N 54 24 E	4241 8253 5466	Stevens. Swan Point 3. Love Point Light.
2	39 05 04.52	76 14 39.16	N 4 29 W S 48 07 W S 1 09 E	S 4 29 E N 48 06 E N 1 09 W	3970 4996 6822	Stevens. Love Point Light. Wickes Beach.
3	39 05 32.80	76 15 16.79	N 12 43 E N 20 58 W S 32 28 W	S 12 44 W S 20 59 E N 32 27 E	3081 6518 5085	Stevens. Swan Point 3. Love Point Light.
4	39 06 34.48	76 15 26.56	N 45 20 E N 9 39 E N 27 23 W	S 45 20 W S 9 39 W S 27 24 E	1315 2893 4512	Stevens. Windmill Point. Swan Point 3.
5	39 06 18.23	76 15 01.87	N 11 00 E N 30 54 W S 28 12 W	S 11 00 W S 30 54 E N 28 11 E	1500 5306 6605	Stevens. Swan Point 3. Love Point Light.
6	39 06 01.63	76 14 35.07	N 11 37 W N 33 50 W S 36 02 W	S 11 38 E S 33 51 E N 36 00 E	2075 6157 6506	Stevens. Swan Point 3. Love Point Light.

UNDER THE BAR.

(Entrance Chester River—Chart No. 29.)

1	39 05 32.80	76 15 16.79	N 12 43 E N 20 58 W S 32 28 W	S 12 44 W S 20 59 E N 32 27 E	3081 6518 5085	Stevens. Swan Point 3. Love Point Light.
2	39 05 57.81	76 15 50.02	S 13 04 E N 35 40 E N 15 33 W	N 13 04 W S 35 41 W S 15 34 E	8847 2661 5442	Wickes Beach. Stevens. Swan Point 3.
3	39 06 34.48	76 15 26.56	N 45 20 E N 9 39 E N 27 23 W	S 45 20 W S 9 39 W S 27 24 E	1315 2893 4512	Stevens. Windmill Point. Swan Point 3.

HICKORY THICKET.

(Entrance Chester River—Chart No. 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' / "	° / ' / "	° / ' / "	° / ' / "	Yards.	
1	39 03 06.52	76 14 54.74	N 0 43 E	S 0 43 W	7937	Stevens.
			N 79 00 W	S 79 01 E	3373	Love Point Light.
			S 10 54 E	N 10 54 W	2894	Wickes Beach.
2	39 03 35.38	76 14 49.45	N 0 20 W	S 0 20 E	6063	Stevens.
			S 84 33 W	N 84 31 E	3465	Love Point Light.
			S 6 06 E	N 6 06 W	3837	Wickes Beach.
3	39 05 04.52	76 14 39.16	N 4 29 W	S 4 29 E	3970	Stevens.
			S 48 07 W	N 48 06 E	4996	Love Point Light.
			S 1 09 E	N 1 09 W	6822	Wickes Beach.
4	39 04 59.92	76 14 11.55	N 14 08 W	S 14 08 E	4241	Stevens.
			N 20 21 W	S 20 22 E	8253	Swan Point 3.
			S 54 25 W	N 54 24 E	5466	Love Point Light.
5	39 03 44.38	76 14 28.17	N 5 08 W	S 5 09 E	6687	Stevens.
			S 81 02 W	N 81 00 E	4958	Love Point Light.
			S 2 07 W	N 2 07 E	4122	Wickes Beach.

EAST NECK BAY.

(Entrance Chester River—Chart No. 29.)

1	39 03 53.27	76 16 11.63	S 30 11 E	N 30 10 W	5112	Wickes Beach.
			N 18 25 E	S 18 26 W	6705	Stevens.
			N 5 24 W	S 5 24 E	9485	Swan Point 3.
Thence along county boundary as delineated on Chart No. 29 to corner No. 2.						
2	39 04 15.35	76 16 34.41	S 31 33 E	N 31 31 W	6057	Wickes Beach.
			N 25 49 E	S 25 50 W	6240	Stevens.
			N 1 56 W	S 1 56 E	8703	Swan Point 3.
3	39 04 33.16	76 16 01.82	S 21 51 E	N 21 50 W	6209	Wickes Beach.
			N 20 22 E	S 20 22 W	5351	Stevens.
			N 8 05 W	S 8 05 E	8179	Swan Point 3.
4	39 04 19.08	76 15 42.07	S 18 43 E	N 18 42 W	5584	Wickes Beach.
			N 13 44 E	S 13 45 W	5653	Stevens.
			N 11 01 W	S 11 01 E	8733	Swan Point 3.

Survey of Oyster Bars, Kent County, Md.

ENTRANCE LUMPS.

(Entrance Chester River—Chart No. 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '		
1	39 03 06.52	76 14 54.74	N 0 43 E N 79 00 W S 10 54 E	S 0 43 W S 79 01 E N 10 54 W	Yards. 7937 3373 2894	Stevens. Love Point Light. Wickes Beach.
2	39 03 13.74	76 15 46.03	N 10 39 E N 78 28 W S 60 10 W	S 10 39 W S 78 29 E N 60 08 E	7829 2001 4162	Stevens. Love Point Light. Amour.
3	39 03 34.90	76 15 45.98	N 11 42 E S 80 55 W S 26 31 E	S 11 42 W N 80 54 E N 26 30 W	7128 1987 4245	Stevens. Love Point Light. Wickes Beach.
4	39 03 35.38	76 14 49.45	N 0 20 W S 84 33 W S 6 06 E	S 0 20 E N 84 31 E N 6 06 W	6963 3405 3837	Stevens. Love Point Light. Wickes Beach.

WICKES BEACH.

(Entrance Chester River—Chart No. 29.)

1	39 01 21.86	76 15 15.70	N 57 57 E S 33 28 W N 77 57 W	S 57 57 W S 33 29 E S 77 59 E	1296 5002 5329	Wickes Beach Love Point Light. Railway Water Tank.
2	39 02 13.18	76 16 24.02	N 21 31 W S 79 43 W S 10 26 W	S 21 31 E N 79 42 E N 10 26 E	2625 3470 5562	Love Point Light Railway Water Tank. Macum.
3	39 02 29.54	76 16 03.98	N 38 14 W S 73 27 W S 14 18 W	S 38 15 E N 73 26 E N 14 18 E	2407 4112 6215	Love Point Light. Railway Water Tank. Macum.
4	39 02 29.16	76 15 19.18	N 54 30 W S 77 16 W S 24 19 W	S 54 31 E N 77 14 E N 24 18 E	3276 5249 6593	Love Point Light. Railway Water Tank. Macum.

DREDGE ROCK.

(Lower Chester River—Chart No. 29.)

1	39 00 43.67	76 14 46.20	S 22 10 E S 83 37 E N 9 16 E	N 22 09 W N 83 36 W S 9 16 W	4223 2791 2001	Muddy. Narrows Point. Wickes Beach.
2	39 00 52.68	76 15 19.53	S 80 27 E N 35 39 E N 67 42 W	N 80 26 W S 35 39 W S 67 44 E	3702 2057 5524	Narrows Point. Wickes Beach. Railway Water Tank
3	39 01 16.43	76 16 09.35	S 74 05 E N 70 52 E N 17 12 W	N 74 03 W S 70 52 W S 17 12 E	5159 2656 4559	Narrows Point. Wickes Beach. Love Point Light.
4	39 01 18.75	76 15 22.18	S 68 08 E N 58 01 E N 31 11 W	N 68 06 W S 58 01 W S 31 12 E	4008 1496 5000	Narrows Point. Wickes Beach. Love Point Light.

SIDE SHOAL.

(Lower Chester River—Charts Nos. 29 and 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	39 00 34.80	76 14 02.32	S 6 55 E	N 6 55 W	3639	Muddy.
			S 89 35 E	N 89 35 W	1619	Narrows Point.
			N 20 06 W	S 20 06 E	2422	Wickes Beach.
2	39 00 59.03	76 14 11.53	N 22 02 W	S 22 02 E	1573	Wickes Beach.
			S 56 33 W	N 56 32 E	5387	Macum.
			S 8 44 E	N 8 44 W	4482	Muddy.
3	39 00 52.93	76 13 48.20	N 35 53 W	S 35 54 E	2053	Wickes Beach.
			S 61 36 W	N 61 34 E	5816	Macum.
			S 0 54 E	N 0 54 W	4225	Muddy.

MUD.

(Lower Chester River—Charts Nos. 29 and 30.)

1	39 00 10.92	76 14 17.37	S 16 33 E	N 16 33 W	2928	Muddy.
			N 68 30 E	S 68 31 W	2165	Narrows Point.
			N 8 04 W	S 8 04 E	3110	Wickes Beach.
2	39 00 43.67	76 14 46.20	S 22 10 E	N 22 09 W	4223	Muddy.
			S 83 37 E	N 83 36 W	2701	Narrows Point.
			N 9 16 E	S 9 16 W	2001	Wickes Beach.
3	39 00 55.02	76 14 34.42	S 16 38 E	N 16 38 W	4482	Muddy.
			S 74 17 E	N 74 16 W	2559	Narrows Point.
			N 0 27 E	S 0 27 W	1592	Wickes Beach.
4	39 00 34.80	76 14 02.32	S 6 55 E	N 6 55 W	3639	Muddy.
			S 89 35 E	N 89 34 W	1619	Narrows Point.
			N 20 06 W	S 20 06 E	2422	Wickes Beach.
5	39 00 23.40	76 13 40.32	S 2 30 W	N 2 30 E	3231	Muddy.
			N 70 17 E	S 70 17 W	1105	Narrows Point.
			N 27 57 W	S 27 57 E	3010	Wickes Beach.

FERRY (KENT COUNTY).

(Lower Chester River—Chart No. 29.)

1	39 00 04.45	76 14 38.00	S 28 01 E	N 28 00 W	2932	Muddy.
			N 68 25 E	S 68 26 W	2750	Narrows Point.
			N 1 51 E	S 1 51 W	3299	Wickes Beach.
			Thence along county boundary as delineated on Chart No. 29 to corner No. 2.			
2	39 00 29.37	76 15 30.72	S 38 53 E	N 38 52 W	4405	Muddy.
			N 87 30 E	S 87 32 W	3949	Narrows Point.
			N 31 17 E	S 31 18 W	2876	Wickes Beach.
3	39 00 44.20	76 15 09.62	S 29 21 E	N 29 20 W	4507	Muddy.
			S 84 27 E	N 84 26 W	3398	Narrows Point.
			N 25 37 E	S 25 37 W	2171	Wickes Beach.

Survey of Oyster Bars, Kent County, Md.

BUOY ROCK.

(Lower Chester River—Charts Nos. 29 and 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '		
1	38 59 28.23	76 12 41.30	S 78 44 E N 29 44 E N 12 56 W	N 78 43 W S 29 45 W S 12 57 E	Yards. 2669 2805 2291	Bluebeard. Rain. Narrows Point.
2	39 00 10.92	76 14 17.37	S 16 33 E N 68 30 E N 8 04 W	N 16 33 W S 68 31 W S 8 04 E	2928 2165 3110	Muddy. Narrows Point. Wickes Beach.
3	39 00 23.40	76 13 40.32	S 2 30 W N 70 17 E N 27 57 W	N 2 30 E S 70 17 W S 27 57 E	3231 1105 3010	Muddy. Narrows Point. Wickes Beach.
4	39 00 02.44	76 13 39.18	S 67 59 E N 43 05 E N 23 10 W	N 67 57 W S 43 06 W S 23 11 E	4467 1479 3661	Bluebeard. Narrows Point. Wickes Beach.
5	38 59 54.30	76 12 29.26	S 58 40 E N 34 24 E N 31 30 W	N 58 39 W S 34 25 W S 31 31 E	2695 1981 1588	Bluebeard. Rain. Narrows Point.

HAIL CREEK.

(Lower Chester River—Chart No. 30.)

1	39 00 27.60	76 12 25.07	S 32 12 W S 40 57 E N 63 07 E	N 32 11 E N 40 57 W S 63 08 W	3982 3343 1131	Muddy. Bluebeard. Rain.
2	39 00 33.00	76 12 30.88	S 29 00 W S 40 53 E N 74 11 E	N 29 00 E N 40 53 W S 74 11 W	4061 3581 1207	Muddy. Bluebeard. Rain.
3	39 00 40.76	76 12 17.24	S 31 24 W S 33 46 E S 78 51 E	N 31 23 E N 33 45 W N 78 49 W	4467 3572 4027	Muddy. Bluebeard. Blakeford.
4	39 00 37.85	76 12 06.10	S 35 12 W S 30 31 E S 79 27 E	N 35 11 E N 30 30 W N 79 26 W	4546 3332 3720	Muddy. Bluebeard. Blakeford.

HAIL POINT.

(Lower Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 00 03.35	76 12 06.70	N 21 34 E N 53 37 W S 45 36 W	S 21 34 W S 53 38 E N 45 35 E	1429 1768 3647	Rain. Narrows Point. Muddy.
2	39 00 38.78	76 11 52.80	S 38 25 W S 24 49 E S 77 51 E	N 38 24 E N 24 48 W N 77 50 W	4781 3108 3384	Muddy. Bluebeard. Blakeford.
3	39 00 31.00	76 11 34.58	S 18 05 E S 80 58 E N 40 07 E	N 18 05 W N 80 58 W S 40 08 W	2777 2863 2702	Bluebeard. Blakeford. Break.
4	39 00 07.90	76 11 43.20	N 83 51 E N 4 31 W N 66 19 W	S 83 52 W S 4 31 E S 66 20 E	3072 1179 2230	Blakeford. Rain. Narrows Point.

BLACK BUOY.

(Middle Chester River—Chart No. 30.)

1	39 00 30.80	76 11 21.27	S 11 00 E S 79 52 E N 33 52 E	N 11 00 W N 79 51 W S 33 52 W	2681 2516 2497	Bluebeard. Blakeford. Break.
2	39 00 49.90	76 11 48.77	S 71 14 E N 55 57 E N 22 19 W	N 71 13 W S 55 58 W S 22 19 E	3380 2551 2491	Blakeford. Break. Overton.
3	39 00 50.95	76 11 16.05	S 64 22 E N 41 58 E N 38 31 W	N 64 21 W S 41 59 W S 38 32 E	2595 1874 2901	Blakeford. Break. Overton.

DURDIN.

(Middle Chester River—Chart No. 30.)

1	39 00 59.82	76 11 16.15	S 54 26 W S 58 45 E N 48 56 E	N 54 26 E N 58 44 W S 48 57 W	990 2741 1666	Rain. Blakeford. Break.
2	39 01 13.87	76 12 12.17	N 32 32 E N 77 12 E N 12 27 W	S 32 32 W S 77 13 W S 12 27 E	1245 2800 1533	Rain. Break. Overton.
3	39 01 56.03	76 12 09.10	S 13 24 E S 73 11 E N 45 38 E	N 13 24 W N 73 10 W S 45 39 W	2540 2768 2377	Rain. Break. Fir.
4	39 02 00.58	76 11 57.00	S 5 53 E S 67 44 E N 42 29 E	N 5 53 W N 67 43 W S 42 29 W	2638 2519 2045	Rain. Break. Fir.

Survey of Oyster Bars, Kent County, Md.

BELTS.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 01 56.03	76 12 09.10	S 13 24 E S 73 11 E N 45 38 E	N 13 24 W N 73 10 W S 45 39 W	2540 2768 2377	Rain. Break. Fir.
2	39 02 30.78	76 12 29.40	S 58 13 E N 77 37 E N 1 24 W	N 58 12 W S 77 38 W S 1 24 E	3745 2287 1920	Break. Fir. Bay Bush Point.
3	39 02 41.53	76 12 18.36	S 51 05 E N 86 14 E N 12 13 W	N 51 04 W S 86 15 W S 12 13 E	3718 1948 1593	Break. Fir. Bay Bush Point.
4	39 03 04.03	76 12 29.33	S 3 07 E S 74 13 E N 75 41 E	N 3 07 W N 74 12 W S 75 42 W	2221 2320 2969	Overton. Fir. Gordon.
5	39 03 02.02	76 12 10.78	S 9 41 W S 72 08 E N 71 26 E	N 9 41 E N 72 08 W S 71 27 W	2182 1836 2520	Overton. Fir. Gordon.
6	39 02 30.33	76 12 16.98	S 55 34 E N 75 09 E N 10 55 W	N 55 33 W S 75 10 W S 10 55 E	3462 1973 1971	Break. Fir. Bay Bush Point.
7	39 02 00.58	76 11 57.00	S 5 53 E S 67 44 E N 42 29 E	N 5 53 W N 67 43 W S 42 29 W	2638 2519 2045	Rain. Break. Fir.

PINEY POINT (KENT COUNTY).

(Middle Chester River—Chart No. 30.)

1	39 02 00.00	76 11 41.20	S 63 58 E N 32 18 E S 87 04 W	N 63 58 W S 32 18 W N 87 04 E	2131 1808 1147	Break. Fir. Overton.
2	39 02 46.62	76 12 10.62	S 12 50 W S 88 33 E N 61 00 E	N 12 50 E N 88 33 W S 61 01 W	1673 1740 2726	Overton. Fir. Gordon.
3	39 03 18.25	76 11 43.76	S 21 47 W S 42 56 E N 81 22 E	N 21 46 E N 42 56 W S 81 23 W	2905 1517 1697	Overton. Fir. Gordon.

Thence along county boundary as delineated on Chart No. 30 to corner No. 1.

BAY BUSH POINT.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	39° 03' 02.02	76° 12' 10.78	S 9 41 W	N 9 41 E	2182	Overton.
			S 72 08 E	N 72 08 W	1836	Fir.
			N 71 26 E	S 71 27 W	2520	Gordon.
2	39° 03' 04.03	76° 12' 29.33	S 3 07 E	N 3 07 W	2221	Overton.
			S 74 13 E	N 74 12 W	2320	Fir.
			N 75 41 E	S 75 42 W	2969	Gordon.
3	39° 03' 15.63	76° 12' 22.55	S 1 16 W	N 1 16 E	2609	Overton.
			S 63 32 E	N 63 31 W	2293	Fir.
			N 82 45 E	S 82 46 W	2720	Gordon.
4	39° 03' 58.35	76° 12' 27.02	S 6 03 W	N 6 03 E	1039	Bay Bush Point.
			S 68 42 E	N 68 41 W	3022	Gordon.
			S 88 28 E	N 88 26 W	4609	Reeds.
5	39° 03' 52.40	76° 12' 01.00	S 43 37 W	N 43 37 E	1150	Bay Bush Point.
			S 67 11 E	N 67 10 W	2312	Gordon.
			N 88 53 E	S 88 54 W	3925	Reeds.

BLUFF POINT.

(Middle Chester River—Chart No. 30.)

1	39° 03' 52.40	76° 12' 01.00	S 43 37 W	N 43 37 E	1150	Bay Bush Point.
			S 67 11 E	N 67 10 W	2312	Gordon.
			N 88 53 E	S 88 54 W	3925	Reeds.
2	39° 03' 58.35	76° 12' 27.02	S 6 03 W	N 6 03 E	1039	Bay Bush Point.
			S 68 42 E	N 68 41 W	3022	Gordon.
			S 88 28 E	N 88 26 W	4609	Reeds.
3	39° 04' 17.59	76° 11' 58.20	S 27 16 W	N 27 16 E	1892	Bay Bush Point.
			S 49 41 E	N 49 40 W	2699	Gordon.
			S 78 39 E	N 78 38 W	3927	Reeds.
4	39° 04' 59.05	76° 11' 48.68	N 62 39 E	S 62 40 W	2994	Langford.
			N 1 49 E	S 1 49 W	924	Inn.
			N 63 47 W	S 63 48 E	694	Little Gum.
5	39° 04' 59.57	76° 11' 01.32	N 46 10 E	S 46 11 W	1962	Langford.
			N 0 05 W	S 0 05 E	1621	Deep Cove.
			N 81 12 W	S 81 13 E	1890	Little Gum.
6	39° 03' 57.95	76° 11' 42.85	S 51 15 W	N 51 15 E	1629	Bay Bush Point.
			S 56 45 E	N 56 45 W	1978	Gordon.
			S 88 10 E	N 88 09 W	3448	Reeds.

Survey of Oyster Bars, Kent County, Md.

CHESTER RIVER MIDDLEGROUND.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	39 03 57.95	76 11 42.85	S 51 15 W	N 51 15 E	1629	Bay Bush Point.
			S 56 45 E	N 56 45 W	1978	Gordon.
			S 88 10 E	N 88 09 W	3448	Reeds.
2	39 04 59.57	76 11 01.32	N 46 10 E	S 46 11 W	1962	Langford.
			N 0 05 W	S 0 05 E	1621	Deep Cove.
			N 81 12 W	S 81 13 E	1890	Little Gum.
3	39 04 56.95	76 10 32.18	S 37 07 E	N 37 06 W	2633	Reeds.
			S 81 32 E	N 81 31 W	2402	Holton Point.
			N 24 10 E	S 24 11 W	1586	Langford.
4	39 04 03.60	76 11 24.16	S 55 31 W	N 55 30 E	2138	Bay Bush Point.
			S 42 22 E	N 42 22 W	1726	Gordon.
			S 84 11 E	N 84 10 W	2971	Reeds.

LIMEKILN.

(Grays Inn Creek Entrance—Chart No. 30.)

1	39 04 59.05	76 11 48.68	N 62 39 E	S 62 40 W	2994	Langford.
			N 1 49 E	S 1 49 W	924	Inn.
			N 63 47 W	S 63 48 E	694	Little Gum.
2	39 05 41.75	76 12 22.00	N 89 19 W	S 89 20 E	557	Lucy.
			S 10 20 W	N 10 20 E	535	Weeks.
			S 64 11 E	N 64 11 W	833	Tray.
3	39 05 45.80	76 12 12.40	S 80 51 W	N 80 51 E	819	Lucy.
			S 27 43 W	N 27 43 E	749	Weeks.
			S 44 54 E	N 44 54 W	705	Tray.
4	39 05 09.67	76 11 43.87	N 68 06 E	S 68 07 W	2731	Langford.
			N 9 46 W	S 9 46 E	573	Inn.
			S 86 04 W	N 86 03 E	750	Little Gum.

WILLOW BOTTOM.

(Middle Chester River—Chart No. 30.)

1	39 04 59.05	76 11 48.68	N 62 39 E	S 62 40 W	2994	Langford.
			N 1 49 E	S 1 49 W	924	Inn.
			N 63 47 W	S 63 48 E	694	Little Gum.
2	39 05 09.67	76 11 43.87	N 68 06 E	S 68 07 W	2731	Langford.
			N 9 46 W	S 9 46 E	573	Inn.
			S 86 03 W	N 86 03 E	750	Little Gum.
3	39 05 30.75	76 10 45.20	N 72 48 E	S 72 49 W	1038	Langford.
			N 36 38 W	S 36 38 E	714	Deep Cove.
			S 71 36 W	N 71 35 E	2415	Little Gum.
4	39 04 59.57	76 11 01.32	N 46 10 E	S 46 11 W	1962	Langford.
			N 0 05 W	S 0 05 E	1621	Deep Cove.
			N 81 12 W	S 81 13 E	1890	Little Gum.

NICHOLS.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	39 04 59.43	76 11 01.28	N 46 03 E	S 46 04 W	1964	Langford.
			N 0 07 W	S 0 07 E	1632	Deep Cove.
			N 81 04 W	S 81 05 E	1892	Little Gum.
2	39 05 30.75	76 10 45.33	N 72 52 E	S 72 52 W	1041	Langford.
			N 36 25 W	S 36 25 E	712	Deep Cove.
			S 71 34 W	N 71 33 E	2411	Little Gum.
3	39 05 27.96	76 10 26.56	N 51 22 E	S 51 22 W	642	Langford.
			N 53 56 W	S 53 56 E	1133	Deep Cove.
			S 76 29 W	N 76 28 E	2861	Little Gum.

HUDSON.

(Langford Creek—Chart No. 30.)

1	39 05 27.96	76 10 26.56	N 51 22 E	S 51 22 W	642	Langford.
			N 53 56 W	S 53 56 E	1133	Deep Cove.
			S 76 29 W	N 76 28 E	2861	Little Gum.
2	39 05 30.75	76 10 45.33	N 72 52 E	S 72 52 W	1041	Langford.
			N 36 25 W	S 36 25 E	712	Deep Cove.
			S 71 34 W	N 71 33 E	2411	Little Gum.
3	39 05 42.00	76 10 41.32	S 85 24 E	N 85 24 W	906	Langford.
			N 44 56 E	S 44 57 W	971	Peach.
			N 69 24 W	S 69 24 E	550	Deep Cove.
4	39 05 51.55	76 10 52.10	S 71 24 E	N 71 24 W	1238	Langford.
			N 69 05 E	S 69 06 W	1024	Peach.
			N 19 31 W	S 19 31 E	551	Snub.
5	39 06 08.55	76 10 26.40	N 8 34 E	S 8 34 W	1231	Drum.
			S 86 23 W	N 86 23 E	861	Snub.
			S 52 40 W	N 52 40 E	1157	Deep Cove.

SAND THISTLE.

(Langford Creek—Chart No. 30.)

1	39 05 51.55	76 10 52.10	S 71 24 E	N 71 24 W	1238	Langford.
			N 69 05 E	S 69 06 W	1024	Peach.
			N 19 31 W	S 19 31 E	551	Snub.
2	39 06 25.20	76 10 43.22	S 34 07 W	N 34 07 E	744	Snub.
			S 43 12 E	N 43 12 W	1055	Peach.
			N 77 31 E	S 77 32 W	1212	Major.
3	39 06 08.55	76 10 26.40	N 8 34 E	S 8 34 W	1231	Drum.
			S 86 23 W	N 86 23 E	861	Snub.
			S 52 40 W	N 52 40 E	1157	Deep Cove.

Survey of Oyster Bars, Kent County, Md.

BOATHOUSE.

(Langford Creek—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 06 08.55	76 10 26.40	N 8 34 E S 86 23 W S 52 40 W	S 8 34 W N 86 23 E N 52 40 E	1231 861 1157	Drum. Snub. Deep Cove.
2	39 06 25.20	76 10 43.22	S 34 07 W S 43 12 E N 77 31 E	N 34 07 E N 43 12 W S 77 32 W	744 1055 1212	Snub. Peach. Major.
3	39 06 29.80	76 10 19.85	S 6 42 E N 79 23 E N 1 17 E	N 6 42 W S 79 23 W S 1 17 W	931 579 502	Peach. Major. Drum.
4	39 06 39.54	76 09 58.30	N 5 53 E N 72 41 W S 20 04 W	S 5 53 W S 72 42 E N 20 04 E	978 581 1334	Neck. Drum. Peach.

DRUM POINT.

(Langford Creek—Chart No. 30.)

1	39 06 29.80	76 10 19.85	S 6 42 E N 79 23 E N 1 17 E	N 6 42 W S 79 23 W S 1 17 W	931 579 502	Peach. Major. Drum.
2	39 06 54.02	76 10 06.02	N 26 47 W S 48 09 W S 16 07 E	S 26 47 E N 48 09 E N 16 07 W	827 472 739	Davis. Drum. Major.
3	39 06 54.14	76 09 58.70	N 12 59 E S 59 36 W S 1 02 E	S 12 59 W N 59 36 E N 1 02 W	492 631 714	Neck. Drum. Major.
4	39 06 39.54	76 09 58.30	N 5 53 E N 72 41 W S 20 04 W	S 5 53 W S 72 41 E N 20 04 E	978 581 1334	Neck. Drum. Peach.

DAVIS CREEK.

(Langford Creek—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	39 06 54.02	76 10 06.02	N 26 47 W S 48 09 W S 16 07 E	S 26 47 E N 48 09 E N 16 07 W	827 472 739	Davis. Drum. Major.
2	39 07 23.47	76 10 23.08	S 20 59 E S 55 51 E N 62 23 E	N 20 59 W N 55 50 W S 62 24 W	1824 908 1025	Major. Neck. King.
3	39 07 23.03	76 10 15.45	S 4 37 W S 48 04 E N 55 19 E	N 4 37 E N 48 04 W S 55 19 W	1298 740 861	Drum. Neck. King.
4	39 07 11.02	76 09 59.10	N 16 30 W N 73 24 W S 31 00 W	S 16 30 E S 73 25 E N 31 00 E	997 579 1037	Isle. Davis. Drum.
5	39 06 54.14	76 09 58.70	N 12 59 E S 59 36 W S 1 02 E	S 12 59 W N 59 36 E N 1 02 W	492 631 714	Neck. Drum. Major.

ISLAND POINT.

(Langford Creek (West Fork)—Chart No. 30.)

1	39 07 29.42	76 10 04.32	N 23 33 W S 42 31 W S 19 59 E	S 23 33 E N 42 31 E N 19 59 W	365 618 756	Isle. Davis. Neck.
2	39 07 29.93	76 10 12.85	S 22 15 W S 33 33 E N 68 06 E	N 22 15 E N 33 33 W S 68 06 W	511 873 689	Davis. Neck. King.
3	39 07 40.33	76 10 06.33	S 78 40 E N 14 13 W N 49 05 W	N 78 40 W S 14 13 E S 49 05 E	477 673 913	King. Hornor. Eagle.
4	39 07 41.24	76 10 11.92	S 78 33 E N 1 42 W N 43 45 W	N 78 33 W S 1 42 E S 43 46 E	628 622 785	King. Hornor. Eagle.
5	39 07 46.05	76 10 10.35	S 63 26 E N 7 24 W N 55 16 W	N 63 26 W S 7 24 E S 55 16 E	641 463 712	King. Hornor. Eagle.
6	39 07 44.76	76 10 03.80	N 59 20 W S 41 15 W S 58 48 E	S 59 20 E N 41 15 E N 58 47 W	880 237 469	Eagle. Isle. King.

Survey of Oyster Bars, Kent County, Md.

EAGLE POINT.

(Langford Creek (West Fork)—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 07 49.80	76 10 15.76	S 60 00 E	N 60 00 W	827	King. Hornor. Eagle.
			N 13 56 E	S 13 56 W	342	
			N 57 47 W	S 57 47 E	523	
2	39 08 03.30	76 10 32.17	S 76 33 E	N 76 33 W	528	Hornor. West. Mill.
			N 40 03 E	S 40 03 W	383	
			N 17 13 W	S 17 13 E	642	
3	39 08 07.51	76 10 26.74	S 54 29 E	N 54 29 W	455	Hornor. West. Mill.
			N 33 48 E	S 33 48 W	182	
			N 35 13 W	S 35 13 E	576	
4	39 07 54.00	76 10 10.23	N 28 32 W	S 28 32 E	690	West. Eagle. Isle.
			N 76 51 W	S 76 52 E	604	
			S 1 04 E	N 1 04 W	494	

WILSONS POINT.

(Langford Creek (West Fork)—Chart No. 30.)

1	39 08 34.45	76 10 43.95	N 31 23 E	S 31 23 W	233	Locust. Bungay. Kinsley.
			N 52 43 W	S 52 43 E	261	
			S 36 43 W	N 36 43 E	598	
2	39 08 36.60	76 10 50.92	S 17 33 W	N 17 33 E	580	Kinsley. Nat. Locust.
			S 32 12 E	N 32 12 W	286	
			N 67 24 E	S 67 24 W	330	
3	39 08 48.27	76 10 43.35	S 32 01 W	N 32 01 E	664	Whale. Nat. Locust.
			S 4 13 W	N 4 13 E	637	
			S 21 38 E	N 21 38 W	287	
4	39 08 47.35	76 10 40.25	S 39 10 W	N 39 10 E	687	Whale. Nat. Locust.
			S 11 59 W	N 11 59 E	618	
			S 5 55 E	N 5 55 W	237	

KINGS CREEK.

(Langford Creek (East Fork)—Chart No. 30.)

1	39 07 32.33	76 09 21.40	N 84 11 E	S 84 11 W	463	Wann. Noth. King.
			N 29 48 E	S 29 48 W	287	
			N 76 07 W	S 76 07 E	734	
2	39 07 35.85	76 09 22.70	N 85 10 W	S 85 10 E	681	King. Corn. Wann.
			S 26 29 W	N 26 29 E	600	
			S 81 44 E	N 81 44 W	500	
3	39 07 41.33	76 09 00.75	N 33 17 E	S 33 17 W	583	Cult. Leary. Noth.
			N 15 38 W	S 15 38 E	363	
			S 82 00 W	N 82 00 E	494	
4	39 07 37.85	76 08 59.64	N 25 40 E	S 25 41 W	670	Cult. Leary. Noth.
			N 15 12 W	S 15 12 E	483	
			N 81 44 W	S 81 44 E	434	

BAILEY.

(Langford Creek (East Fork)—Chart No. 30.)

Corner of bar,	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 07 46.33	76 09 03.50	N 50 55 E N 8 01 W S 55 42 W	S 50 55 W S 8 01 E N 55 42 E	505 183 397	Cult. Leary. Noth.
2	39 07 48.83	76 09 06.87	S 37 51 W S 8 46 E N 64 00 E	N 37 51 E N 8 46 W S 64 00 W	399 515 535	Noth. Wann. Cult.
3	39 08 02.92	76 08 47.82	N 51 20 E N 22 57 W S 49 06 W	S 51 20 W S 22 57 E N 49 06 E	539 184 579	Hoo. Nest. Leary.
4	39 08 00.40	76 08 44.30	N 37 55 E N 32 51 W S 61 00 W	S 37 55 W S 32 51 E N 61 00 E	535 303 606	Hoo. Nest. Leary.

PHILIPS.

(Langford Creek (East Fork)—Chart No. 30.)

1	39 08 09.97	76 08 43.38	N 71 58 E N 9 45 W S 70 01 W	S 71 58 W S 9 45 E N 70 01 E	320 334 200	Hoo. Woll. Nest.
2	39 08 36.04	76 08 40.31	N 28 27 W S 45 19 W S 44 45 E	S 28 27 E N 45 19 E N 44 44 W	581 245 505	Gut. Harp. Ide.
3	39 08 35.95	76 08 35.33	N 66 59 W S 60 59 W S 32 17 E	S 67 00 E N 60 59 E N 32 17 W	959 349 421	Clay. Harp. Ide.
4	39 08 10.16	76 08 37.42	N 57 54 E N 33 29 W S 77 45 W	S 57 54 W S 33 29 E N 77 45 E	175 386 353	Hoo. Woll. Nest.

WARE.

(Langford Creek (East Fork)—Chart No. 30.)

1	39 08 59.38	76 08 54.90	N 73 39 W S 41 34 W S 12 19 E	S 73 39 E N 41 34 E N 12 19 W	316 556 982	Lovely. Clay. Harp.
2	39 09 01.97	76 09 00.33	N 89 24 W S 24 11 W S 18 35 E	S 89 24 E N 24 11 E N 18 35 W	161 551 1105	Lovely. Clay. Harp.
3	39 09 08.03	76 08 55.65	S 54 28 W S 26 15 W S 10 23 E	N 54 28 E N 26 15 E N 10 22 W	348 788 1272	Lovely. Clay. Harp.
4	39 09 05.60	76 08 50.16	S 74 15 W S 38 15 W S 4 09 E	N 74 15 E N 38 15 E N 4 09 W	445 706 1172	Lovely. Clay. Harp.

Survey of Oyster Bars, Kent County, Md.

EBB POINT.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "		
1	39 05 33.00	76 09 47.26	S 37 17 E N 85 37 E N 46 26 E	N 37 17 W S 85 38 W S 46 26 W	1973 1721 2297	Holton Point. Spaniard Point 2 Upper. Brown.
2	39 06 13.72	76 09 28.55	S 13 26 E S 44 37 E N 79 51 E	N 13 26 W N 44 36 W S 79 52 W	3025 1744 1191	Holton Point. Spaniard Point 2 Upper. Brown.
3	39 06 00.20	76 09 10.92	S 5 30 E S 44 06 E N 46 49 E	N 5 30 W N 44 06 W S 46 49 W	2498 1095 973	Holton Point. Spaniard Point 2 Upper. Brown.
4	39 05 35.30	76 09 32.67	S 26 14 E S 87 41 E N 40 23 E	N 26 14 W S 87 41 W S 40 24 W	1835 1334 1976	Holton Point. Spaniard Point 2 Upper. Brown.

CLIFF.

(Middle Chester River—Chart No. 30.)

1	39 06 00.20	76 09 10.92	S 5 30 E S 44 06 E N 46 49 E	N 5 30 W N 44 06 W S 46 49 W	2498 1095 973	Holton Point. Spaniard Point 2 Upper. Brown.
2	39 06 13.72	76 09 28.55	S 13 26 E S 44 37 E N 79 51 E	N 13 26 W N 44 36 W S 79 52 W	3025 1744 1191	Holton Point. Spaniard Point 2 Upper. Brown.
3	39 06 12.68	76 08 40.08	S 2 19 W S 51 34 E N 30 40 E	N 2 19 E N 51 33 W S 30 40 W	1208 953 517	Spaniard Point 2 Upper. Evans. Stratton.
4	39 06 21.95	76 08 23.98	N 50 18 W S 82 38 W S 19 39 E	S 50 18 E N 82 38 E N 19 39 W	207 529 960	Stratton. Brown. Evans.
5	39 06 12.56	76 08 11.72	N 67 34 E N 47 00 W N 73 37 W	S 67 35 W S 47 01 E S 73 37 E	1771 658 883	Deep Point 2. Stratton. Brown.

COMMEGYS BIGHT.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 06 12.56	76 08 11.72	N 67 34 E	S 67 35 W	1771	Deep Point 2. Stratton. Brown.
			N 47 00 W	S 47 01 E	658	
			N 73 37 W	S 73 37 E	883	
2	39 06 21.95	76 08 23.98	N 50 18 W	S 50 18 E	207	Stratton. Brown. Evans.
			S 82 38 W	N 82 38 E	529	
			S 19 39 E	N 19 39 W	960	
3	39 06 38.73	76 08 14.70	S 42 54 W	N 42 54 E	592	Stratton. Evans. Deep Point 2.
			S 3 05 E	N 3 05 W	1473	
			S 83 07 E	N 83 06 W	1727	
4	39 06 25.00	76 07 12.53	S 11 25 W	N 11 25 E	1258	Chester. Corpse. Deep Point 2.
			S 80 30 E	N 80 30 W	681	
			N 17 33 E	S 17 33 W	269	

SHEEP (KENT COUNTY).

(Middle Chester River—Chart No. 30.)

1	39 06 23.28	76 07 08.81	S 16 26 W	N 16 26 E	1225	Chester. Corpse. Deep Point 2.
			S 84 36 E	N 84 36 W	576	
			N 3 04 W	S 3 04 E	314	
2	39 06 36.86	76 06 50.13	S 9 12 E	N 9 12 W	520	Corpse. Indian. Thorn.
			N 65 54 E	S 65 54 W	820	
			N 19 52 E	S 19 52 W	851	
3	39 06 34.74	76 06 47.60	S 2 09 E	N 2 09 W	441	Corpse. Indian. Thorn.
			N 59 13 E	S 59 13 W	794	
			N 14 19 E	S 14 20 W	900	

DEEP POINT.

(Middle Chester River—Chart No. 30.)

1	39 06 41.60	76 06 52.05	S 11 14 E	N 11 14 W	685	Corpse. Indian. Thorn.
			N 77 39 E	S 77 39 W	818	
			N 27 56 E	S 27 56 W	725	
2	39 06 43.87	76 06 57.40	S 20 06 E	N 20 06 W	797	Corpse. Indian. Thorn.
			N 84 01 E	S 84 01 W	945	
			N 40 25 E	S 40 26 W	740	
3	39 07 04.49	76 06 29.43	S 62 38 W	N 62 38 E	287	Thorn. Indian. Ashland.
			S 18 56 E	N 18 56 W	631	
			N 82 48 E	S 82 48 W	883	

Survey of Oyster Bars, Kent County, Md.

SHIPPEN CREEK.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 07 13.72	76 06 14.53	S 55 34 W S 67 29 E N 65 45 E	N 55 34 E N 67 29 W S 65 46 W	784 524 1386	Thorn. Ashland. Burns.
2	39 07 15.47	76 06 17.35	S 48 44 W S 65 03 E N 69 07 E	N 48 44 E N 65 02 W S 69 08 W	763 616 1433	Thorn. Ashland. Burns.
3	39 07 27.58	76 06 05.95	S 21 09 E N 84 24 E N 35 47 E	N 21 09 W S 84 24 W S 35 47 W	716 1043 952	Ashland. Burns. Oyster.
4	39 07 25.53	76 06 02.93	S 16 39 E N 79 54 E N 29 33 E	N 16 39 W S 79 54 W S 29 34 W	626 974 967	Ashland. Burns. Oyster.

HADDAWAY.

(Middle Chester River—Chart No. 30.)

1	39 07 43.52	76 05 44.28	S 14 27 W S 47 07 E S 86 47 E	N 14 27 E N 47 07 W N 86 47 W	1246 641 1156	Ashland. Burns. Starkley.
2	39 07 45.08	76 05 45.80	S 12 09 W S 46 12 E S 84 23 E	N 12 09 E N 46 11 W N 84 23 W	1287 705 1200	Ashland. Burns. Starkley.
3	39 07 53.66	76 05 33.76	S 13 57 E S 65 08 E N 67 09 E	N 13 57 W N 65 07 W S 67 09 W	799 967 819	Burns. Starkley. Jarrett.
4	39 07 51.65	76 05 31.78	S 11 13 E S 67 40 E N 61 14 E	N 11 13 W N 67 40 W S 61 14 W	724 892 803	Burns. Starkley. Jarrett.

HOLLYDAY (KENT COUNTY).

(Middle Chester River—Chart No. 30.)

1	39 07 45.52	76 05 27.55	S 3 23 E S 79 31 E N 44 58 E	N 3 23 W N 79 31 W S 44 59 W	504 726 839	Burns. Starkley. Jarrett.
2	39 08 00.77	76 05 00.72	S 77 51 E S 0 50 E S 33 34 W	N 77 50 W N 0 50 W N 33 34 E	1072 646 1221	Booker. Starkley. Burns.
3	39 07 53.80	76 05 00.86	N 89 29 E N 19 07 W S 84 25 W	S 89 30 W S 19 07 E N 84 25 E	1051 333 1159	Booker. Jarrett. Oyster.

MELTON POINT.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 08 20.56	76 04 30.15	S 79 04 E	N 79 04 W	668	Journey. Cake. Pomona.
			N 18 47 E	S 18 47 W	550	
			N 57 27 W	S 57 27 E	1036	
2	39 08 31.66	76 04 45.37	S 41 09 E	N 41 09 W	617	Melton. Cake. Taste.
			N 75 46 E	S 75 46 W	595	
			N 28 21 W	S 28 21 E	1169	
3	39 08 25.78	76 04 29.37	S 64 31 E	N 64 31 W	704	Journey. Cake. Pomona.
			N 24 26 E	S 24 26 W	378	
			N 66 53 W	S 66 54 E	972	

NORTHWEST (KENT COUNTY).

(Middle Chester River—Chart No. 30.)

1	39 08 25.78	76 04 29.37	S 64 31 E	N 64 31 W	704	Journey. Cake. Pomona.
			N 24 26 E	S 24 26 W	378	
			N 66 53 W	S 66 54 E	972	
2	39 08 49.92	76 04 53.37	S 59 11 E	N 59 10 W	916	Cake. Bill. Taste.
			N 66 46 E	S 66 46 W	636	
			N 39 52 W	S 39 52 E	538	
3	39 08 30.13	76 04 28.43	S 53 39 E	N 53 39 W	759	Journey. Cake. Pomona.
			N 33 40 E	S 33 40 W	238	
			N 75 40 W	S 75 40 E	948	

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioner of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars,

Survey of Oyster Bars, Kent County, Md.

together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved March 4, 1909.]

AN ACT Making appropriation for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and ten, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and ten, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved June 25, 1910.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eleven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and eleven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, fifteen thousand dollars.

[Act of Congress approved March 4, 1911.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and twelve, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and twelve, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, thirteen thousand dollars. * * *

[Act of the Legislature of Maryland approved April 2, 1906.]

AN ACT To establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That the following sections be, and they are hereby, added to article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis, and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie. * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section.

* * * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the said to the Clerks of the Circuit court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks shall be construed in all the courts of the State to be barren bottoms and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act; provided, that the said survey and report shall not be construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act.

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the survey, is as follows:

AN ACT Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United

States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or leveling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.¹ *And be it enacted*, That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses (to be by them sworn or affirmed and examined), shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from Second Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland, had a twofold object in view:

"1. To encourage an industry in oyster culture upon the barren bottoms beneath the tidewaters of the State.

"2. To prevent the leasing of natural oyster bars for the purpose of oyster culture."

¹ Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

DEFINITION OF A NATURAL OYSTER BAR.

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoying them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the Commission."

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturists, may be made to yield a greater number of oysters than they now produce.

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

The definition of a natural oyster bar which very nearly approaches a reasonable and satisfactory compromise between the views of the subject held by *oystermen* on one hand and by *oyster culturists* on the other is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Todd v. Job T. Moore.

This definition has been adopted by the Shell Fish Commission as the basis for the determination of the status of the various oyster bottoms surveyed and is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them, and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the Act of Assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the Act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and can not be located or appropriated by any individual.

APPLICATION OF DEFINITION.

Before this definition may be of use in determining, accurately and scientifically, the status of an oyster ground, its central idea, "livelihood," must be expanded into accurately determinable factors, and these factors must be combined into a practical scheme of investigating the condition of the ground under consideration.

Stated briefly, a *livelihood* is represented by a *sum of money* obtained from the sale, at a fixed *price*, of a certain *quantity of oysters* gathered in a given *time* from an allotted *area* of ground.

Knowing the value of each of these factors it becomes possible to calculate the number of oysters an oyster ground must produce per square yard in order that oystermen may secure a livelihood by working upon it.

NOTE.—The factors into which the Commission resolved the livelihood problem, the value assigned to each factor, and the scheme devised for practical use in examining and applying the definition to oyster bottoms are given in outline in their second report under the heading of the preceding extract, and in detail in their first report on pages 32 to 69.

APPENDIX C.—SUMMARY OF THE PARTICULAR SURVEYING OPERATIONS WHICH CONSTITUTE AN "OYSTER SURVEY" AS NOW BEING CARRIED ON IN MARYLAND.

Explanation.—A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest practical accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Triangulation survey.—Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a framework or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

Topographic survey.—The technical records which establish the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the leasable bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

Hydrographic survey.—In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Necessary foundation for an oyster survey.—Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Special surveys and investigations pertaining to oysters.—Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations¹ making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding boat party in addition to the usual hydrographic work.¹ This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

The special oyster investigations² consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

Preparation of results.—The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.³ This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for publication by the Government, the preparation of that part of the annual report of the Commission covering the special oyster surveys and investigations, the making of the leasing charts and finished projections, and finally the filing of the oyster charts and records with the courts and the Commission, thus opening a county for oyster culture.

Summary.—From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

¹ See pages 104 to 123 of "First Annual Report of Maryland Shell Fish Commission."

² See pages 30 to 67 and 129 to 199 of "First Annual Report of Maryland Shell Fish Commission."

³ No mention is made here of the large amount of administrative work of the Commission, which is greatly complicated and increased by the effect of the oyster-survey operations on many thousands of people whose interests are more or less involved; or of the large amount of survey work involved in the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

APPENDIX D.—STATISTICS OF RESULTS OF THE COMBINED OYSTER SURVEY OPERATIONS OF THE GOVERNMENT AND STATE¹

[The dates of the beginning of field work and the filing of certified charts and reports for the following counties are shown in the order named: Anne Arundel, June 29, 1906, and June 29, 1907; Somerset, May 2, 1907, and July 1, 1908; Worcester, Nov. 2, 1907, and Apr. 12, 1909; Calvert, May 3, 1908, and Dec. 14, 1909; Charles, Aug. 18, 1908, and Jan. 27, 1911; St. Marys, May 2, 1908, and July 6, 1911; Baltimore, Apr. 14, 1909, and Aug. 16, 1911; Kent, Apr. 14, 1909, and Oct. 5, 1911.]

Operations	Anne Arundel County	Somerset County	Worcester County	Calvert County	Charles County	St. Marys County	Baltimore County	Kent County	Total
Natural oyster bars surveyed and delineated.....	91	37	15	41	15	124	3	64	415
Acres of natural oyster bars.....	33,666	27,566	2,038	12,303	2,285	25,778	3,050	12,809	131,110
Bottoms surveyed and delineated.....	54	54	..	..	..	..	..	..	54
Acres of bottom surveyed and delineated.....	39,168	39,168	..	..	..	..	..	..	39,168
Clam beds surveyed and delineated.....	..	..	..	..	..	..	..	..	..
Acres of clam beds.....	..	..	..	..	..	..	..	..	..
Boundary buoys located and planted.....	362	151	43	149	51	514	13	211	1,684
Triangulation landmarks established.....	123	86	10	48	42	48	15	147	680
Miles of shore line covered by triangulation.....	110	125	19	95	32	160	12	110	792
Soundings taken.....	220	175	41	110	167	250	50	150	1,772
Miles of examination of shell bottom with chain apparatus.....	349	175	162	143	607	113	63	154	1,095
Oyster investigation stations occupied.....	449	679	162	143	607	113	63	154	4,495
Tide stations established.....	4	1	1	1	2	1,472	1	1	22
Number of soundings over shell bottoms.....	37,049	17,964	1,187	3,649	1,631	19,344	1,080	8,123	103,489
Square miles covered by soundings and chain apparatus.....	58	47	3	30	4	57	6	21	229
Plotted.....	9	13	2	5	8	15	4	10	66
Leasing charts prepared.....	13	13	2	3	2	3	1	4	45
Oyster charts published.....	2	6	2	5	1	2	2	3	30
Reports published.....	2	2	2	2	2	2	2	2	14
Progress maps published.....	2	2	2	2	2	2	2	1	11

¹ These statistics do not include the large amount of triangulation, topography, and hydrography resulting from previous work of the Coast and Geodetic Survey, which was utilized in the preparation of the published oyster charts and records. Work in Queen Annes, Talbot, and Dorchester Counties has been finished, but final statistics of results will not be published until these counties are opened for oyster culture.

² Less quantities covered by statistics of more than one county.

³ Total area of natural oyster bars of Connecticut is 5,775 acres.

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CHART No. 28

COAST AND GEODETIC SURVEY PROGRESS MAP KENT COUNTY MARYLAND

To accompany report of work of United States
Coast and Geodetic Survey in cooperation
with the Maryland Shell Fish Commission

- Landmarks (Coast Survey Triangulation Stations)
- Waters contiguous to county
- Waters within territorial limits of county
- Limits of projections on file at Washington
- Limits of charts published by Coast and Geodetic Survey

CHART No. 29

CHART No. 30

DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS
QUEEN ANNES COUNTY
MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND
REPORT OF WORK OF UNITED STATES COAST
AND GEODETIC SURVEY IN COOPERATION
WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND
SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1912

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, November 29, 1911.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, together with certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shell fish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, 1909, 1910, 1911, and 1912.

Respectfully,

O. H. TITTMANN, *Superintendent.*

To Hon. CHARLES NAGEL,
Secretary of Commerce and Labor.

CERTIFICATION.

BALTIMORE, MD., *November 28, 1911.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in Queen Annes County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,
Chief of Coast and Geodetic Survey Party,
Assistant, Coast and Geodetic Survey.

BALTIMORE, MD., *November 28, 1911.*

Examined and certified to be correct.

WALTER J. MITCHELL,
CASWELL GRAVE,
BENJAMIN K. GREEN,
Maryland Shell Fish Commission.
SWEPSON EARLE,
Hydrographic Engineer.

NOTE.—Certified copies of this publication and of the charts of the natural oyster bars of Queen Annes County were filed in the office of the clerk of the circuit court of Queen Annes County and in the office of the Board of Shell Fish Commissioners on November 29, 1911.

CONTENTS.

	Page.
PROGRESS MAP.....	follows 176
LETTER OF SUBMITTAL	3
CERTIFICATION.....	5
INTRODUCTION:	
Publications.....	15
Cooperation of the Coast and Geodetic Survey.....	16
Cooperation of the Bureau of Fisheries.....	16
General statement of work of Coast and Geodetic Survey.....	16
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions.....	18
Organization and equipment.....	18
Chronological statement of work.....	19
Statistics.....	21
General remarks.....	21
CHARTS AND MAPS:	
Charts of natural oyster bars.....	22
Leasing charts.....	23
Projections.....	24
Progress maps.....	24
BOUNDARIES OF THE COUNTY WATERS:	
Waters within territorial limits of county.....	25
Waters contiguous to county.....	26
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation.....	27
Method of describing triangulation stations.....	27
Descriptions of triangulation stations in county and adjacent waters—	
<i>Chart No. 29</i> (Chesapeake Bay and entrance to Chester River)—	
Swan Point 3.....	30
Bank.....	30
Gratitude.....	31
Windmill Point.....	31
Stevens.....	32
Baltimore Light (<i>see</i> Progress map).....	32
Sandy Point Light.....	32
Ring.....	32
Love Point Light.....	33
Amour.....	33
Railway Water Tank.....	33
Wickes Beach.....	34
Narrows Point (<i>see also</i> Chart No. 30).....	34
Macum.....	35
Thin.....	35
Muddy (<i>see also</i> Chart No. 30).....	36
Bridge (<i>see also</i> Chart No. 32).....	36
Railroad (<i>see also</i> Chart No. 32).....	36

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 30 (Middle Chester River)—

	Page.
Muddy (<i>see also</i> Chart No. 29).....	36
Narrows Point (<i>see also</i> Chart No. 29).....	34
Bluebeard.....	37
Blakeford.....	37
Rain.....	38
Break.....	38
Overton.....	39
Fir.....	39
Bay Bush Point.....	40
Gordon.....	40
Bird.....	41
Crow.....	41
Grove.....	42
Reeds.....	42
Little Gum.....	42
Inn.....	43
Holton Point.....	43
Earle.....	44
Hydrographic.....	44
Ruth.....	45
Melfield.....	45
Bath.....	46
Ship.....	46
Engineer.....	46
Swepson.....	47
Corsica.....	47
Deep Cove.....	47
Langford.....	48
Spaniard Point 2 Upper.....	48
Quaker.....	49
Evans.....	49
Brown.....	50
Stratton.....	50
Chester.....	51
Westcotts Windmill.....	51
Corpse.....	51
Deep Point 2.....	52
Indian.....	52
Thorn.....	53
Ashland.....	53
Shippen.....	53
Burns.....	54
Oyster.....	54
Starkley.....	55
Jarrett.....	55
Booker.....	56
Journey.....	56
Melton.....	56
Cake.....	57
Pomona.....	57
Bill.....	58
Taste.....	58

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 30 (Middle Chester River)—Continued.

	Page.
Make.....	58
Down.....	59
Julius.....	59
Broad (<i>see</i> Progress map).....	60
Nils (<i>see</i> Progress map).....	60
Wilmers (<i>see</i> Progress map).....	60
Robertson Windmill (<i>see</i> Progress map).....	61
Robertson (<i>see</i> Progress map).....	61
Southeast (<i>see</i> Progress map).....	61
Thorsten (<i>see</i> Progress map).....	62
Blank (<i>see</i> Progress map).....	62
Rolphs (<i>see</i> Progress map).....	62

Chart No. 31 (entrance to Eastern Bay and vicinity)—

Craney.....	63
Thomas Point Shoal Light.....	63
Bloody Point Bar Light.....	63
Tenk.....	64
Straight.....	64
Mouth.....	64
Matta.....	65
Then.....	65
Some.....	66
Batts.....	66
Top.....	67
Ware.....	67
Coffee.....	67
Here.....	68
Samuel.....	68
Liver.....	68
Tuxon.....	69
Steve.....	69
Thompson.....	69
Hope.....	70
Knock.....	70
Landing.....	71
Timber.....	71
Ville.....	71
Greek.....	72
Tom.....	72
Dell.....	73
Turkey.....	73
Cox.....	74
Tull.....	74
Needle.....	74
Kemp Tower.....	75
Kemp.....	75
Rich Neck Water Tank (<i>see also</i> Chart No. 32) ..	76

Chart No. 32 (Eastern Bay and tributaries)—

Over.....	76
Norman.....	76
Parsons.....	77

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 32 (Eastern Bay and tributaries)—Continued.

	Page.
Parsons Island Water Tank.....	77
Alley.....	77
New Barn Cupola.....	78
Dull.....	78
Kirwan.....	79
Bridge (<i>see also</i> Chart No. 29).....	36
Railroad (<i>see also</i> Chart No. 29).....	36
Marshy.....	79
Bonnet.....	79
Brian Reference Station.....	80
Green.....	80
Benn.....	81
Hough.....	81
Won.....	81
Nose.....	82
Stop.....	82
Orb.....	83
Piney.....	83
Ferry.....	84
Owe.....	84
Hook.....	85
Knee.....	85
No.....	85
Oysters.....	86
Bee.....	86
Close.....	87
June.....	87
Chin.....	87
Aller.....	88
Twist.....	88
Wide.....	89
Darce.....	89
Twixt.....	90
Star.....	90
Leaven.....	90
Snout.....	91
South.....	91
Flat.....	92
Albert.....	92
Le Seur.....	92
Attila.....	93
Tobine.....	93
Sang.....	94
Turn.....	94
Go.....	94
Divide.....	95
Princess.....	95
Philip.....	96
Granary.....	96
Morn.....	96
Bush.....	97
Nub.....	97

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 32 (Eastern Bay and tributaries)—Continued.

	Page.
Wheel.....	98
Pick.....	98
Corner.....	99
Right.....	99
Chew.....	100
Whale.....	100
Matter.....	100
Deck.....	101
Quarter.....	101
Nodim.....	102
Gusta.....	102
Sylvia.....	102
Baldwins.....	103
Cousin.....	103
Lloyd.....	104
Edward.....	104
Colonel.....	104
Shaw.....	105
Bruffs.....	105
Law.....	106
James.....	106
Frank.....	107
Wood.....	107
Herr.....	107
Ollie.....	108
Deewat.....	108
Spar.....	109
Sara.....	109
Seth.....	109
Rich Neck Water Tank (<i>see also</i> Chart No. 31).....	76
Dixon.....	110
Pearson.....	110

BOUNDARIES OF OYSTER BARS:

Explanation.....	111
Method of describing boundaries.....	112
Surveying methods for relocation of boundaries.....	113

Boundaries of natural oyster bars in county ¹—

Chart No. 29 (Chesapeake Bay entrance Chester River)—

Broad Creek.....	116
Love Point.....	117
Strong Bay.....	117
Carvel.....	118
Ferry (Queen Annes County).....	118
Long Point (Chester River) (<i>see also</i> Chart No. 30).....	119
Flood Point.....	119
Kent Island Narrows.....	120

Chart No. 30 (Middle Chester River)—

Long Point (Chester River) (<i>see also</i> Chart No. 29).....	119
Blunt.....	120
Poplar.....	121

¹ See separate publications for boundaries of natural bars in adjacent counties.

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

Chart No. 30 (Middle Chester River)—Continued.

	Page.
Carpenter Island.....	121
Horse Race.....	122
Piney Point (Queen Annes County).....	122
Hells Delight.....	123
Reeds.....	123
Robins Cove.....	123
Old Field.....	124
Holton Point.....	124
Town Point.....	125
Emory Wharf.....	125
Earle Cove.....	126
Ship Point.....	126
Possum Point.....	127
Spaniard Point.....	127
Emory Hollow.....	128
Sheep (Queen Annes County).....	128
Mummys Cove.....	129
Hollyday (Queen Annes County).....	129
Booker Wharf.....	129
Northwest (Queen Annes County).....	130

Chart No. 31 (Eastern Bay and tributaries)—

Brick House.....	130
Gum Thicket.....	131
Kent Point.....	131
Long Point (Eastern Bay).....	132
Bodkins Shoals.....	132
Brick House Hill.....	133
Bunker Hill.....	133
Turkey Point.....	134
Middle Block.....	134
Wild Ground.....	135
Pine Tree.....	135
Greeves Cove.....	135
Mattapex.....	136
Shipping Creek.....	137
Batts Neck.....	137
Ringold Middleground.....	138
Erickson Sands.....	138
Pea Hill.....	139
Stevens.....	139
Jones Hole.....	140
Pond Marsh.....	140
Island Cove.....	141
Rooks.....	142
Thompsons.....	143
Johnson Island.....	143
Crab Alley Lumps (<i>see also</i> Chart No. 32).....	144
Cedar Island.....	144
Normans Fine Eyes (<i>see also</i> Chart No. 32).....	145
Cox Neck.....	145
Bodkin Island (<i>see also</i> Chart No. 32).....	146

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

Chart No. 32 (Eastern Bay and tributaries)—

	Page.
Parsons Island.....	146
Bodkin Island (<i>see also</i> Chart No. 31).....	146
Normans Pine Eyes (<i>see also</i> Chart No. 31).....	145
Crab Alley Lumps (<i>see also</i> Chart No. 31).....	144
Buckhorn.....	147
Well Cove.....	148
Sandy Point.....	149
Hog Island.....	149
Walter White.....	150
Prospect.....	150
Dominion.....	151
Bibby.....	151
Normans Marsh.....	152
Hood.....	153
Cabin Creek.....	154
Saw Mill Creek.....	155
Parsons Island Narrows.....	155
Bald Eagle.....	156
Mill Hill.....	156
Greenwood Creek.....	157
Prospect Point.....	157
Bugby.....	158
Coffee.....	158
Persimmon Tree.....	159
Shippen Hole.....	159
Mills.....	160
Hobbs.....	160
Baxters Hollow.....	161
Paca.....	161
Bryan.....	162
Wye Island.....	162
Drum Point.....	163
Wye River Middleground.....	163
Hess.....	164
Stone Wharf.....	164
Race Horse (Queen Annes County).....	165
Whetstone.....	165
Melvin.....	166
Dividing.....	166
Shawns Wharf.....	167
Granary Point.....	167

APPENDICES:

Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.....	169
Appendix B.—“The Haman Oyster Culture Law” (extract from Second Report of Shell Fish Commission).....	173
Appendix C.—Summary of the particular surveying operations which constitute an “oyster survey” as now being carried on in Maryland.....	174
Appendix D.—Statistics of results of the combined operations of the Government and State..	176

SURVEY OF OYSTER BARS, QUEEN ANNES COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws¹ authorizing the work and the natural division of the surveying operations² of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.³ The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey in charge of the work of that service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.⁴

The publications prepared and issued by the State under the direction of the Shell Fish Commission consist of annual reports⁵ of all the operations of the Commission performed under the provisions of the laws of Maryland,⁶ including results of biological and economic oyster investigations, methods and results of the hydrographic survey of

¹ See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

² See Appendix C for a summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.

³ These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C. The publications now ready for issue are those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, St. Marys, Baltimore, Kent, and Queen Annes Counties.

⁴ The technical records and charts for each county are published separately on account of the requirements of the oyster-culture laws of the State and the practical considerations which make it desirable to have each county "opened up" for oyster culture as soon as practicable after the completion of its survey. For these reasons and the fact that these reports are each arranged for distribution and use in one county only without reference to other published records, much of the text of this publication is of necessity identical with similar previous publications for other counties.

⁵ These reports can be obtained by application to the Shell Fish Commission, Marine Bank Building, Baltimore, Md. They are issued annually in October, and the first, second, and third reports are now available for distribution.

⁶ See Appendix B for an extract from the "Second Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman oyster culture law."

the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.¹

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential as a foundation for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.² A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL STATEMENT OF WORK OF COAST AND GEODETIC SURVEY.³

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need very little other summary than is indicated by the published "Charts of Natural Oyster Bars" and the index of hydrographic projections and triangulation stations shown on the county progress maps attached to each report.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

³ For a detail statement of the very large amount of excellent oyster survey work of the Maryland Shell Fish Commission see the "Annual Reports of the Maryland Shell Fish Commission."

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster-survey operations.

The hydrographic projections and published charts are prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shell-fish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to and permanently fixed by published technical descriptions, which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way, and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County":

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last 65 years.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY IN QUEEN ANNES COUNTY.

INSTRUCTIONS.

The following letters, together with the laws¹ of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the survey at Washington, have proved very beneficial to the work and are greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His Excellency Hon. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the commissioners, prepare a program of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,
U. S. C. and G. S. Steamer Endeavor, Baltimore, Md.

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides

¹ For these laws see Appendix A.

the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the field and the preparation for publication of oyster charts and technical records in the office at Washington.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster*, the Coast and Geodetic Survey party has had the constant use of the large steam launch *Inspector* and several other boats furnished by its own service, and the occasional use of the Bureau of Fisheries launch *Canvasback*¹ and the steamer *Governor McLane*² of the State fishery force.

The greater part of the equipment of instruments for the operations of both the Government and State has been furnished by the Coast and Geodetic Survey and consists of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.

The field work of the Coast and Geodetic Survey in Queen Annes County³ dates from April 14, 1909, when the Maryland Shell Fish Commission house boat *Oyster* was moved from her winter quarters at Baltimore to an anchorage off Rockhall Landing in Kent County. The surveying operations carried on from this harbor covered a period of about six weeks, in which practically all triangulation was completed on the Chesapeake Bay shores of both Kent and Baltimore counties as well as a considerable part of the same class of work in the mouth of Chester River in both Queen Annes and Kent counties.

On May 26, 1909, the *Oyster* was moved from Rockhall Landing to an anchorage in the upper part of Chester River near Cliffs Landing, where she was used as the headquarters for all the oyster-surveying operations in that region for a little over a month.

On June 30, 1909, the house boat was moved to a temporary anchorage off Queens-town. This date marked the practical completion of the work in Chester River, the triangulation of which was especially notable for the month of June on account of there having been 92 triangulation stations established, these stations all being marked by monuments and signals and their locations described, besides being occupied for theodolite observations.

On July 1, 1909, the house boat *Oyster* was towed by the State steamer *Governor McLane* to Baltimore Harbor, where the following four days, which included a Sunday and a holiday, were spent in taking on coal, water, and other supplies.

On July 6, 1909, the *Governor McLane* again moved the *Oyster*, this time from Baltimore to an anchorage in Queen Annes County in the northern part of Prospect Bay and near the southern entrance to Kent Narrows. From this harbor as headquarters a few additional triangulation observations were made in Kent County, although the greater part of the work was confined to Queen Annes and Talbot counties.

¹ By courtesy of Dr. H. F. Moore, United States Bureau of Fisheries.

² By courtesy of Capt. James A. Turner, commanding.

³ The field work of Queen Annes County was so intermixed with that of Kent and Talbot Counties that the chronological statement of the work in one of these counties necessarily includes a considerable part of the work of the other two counties.

On July 22, 1909, the house boat was again moved to the vicinity of Rockhall Landing to complete certain oyster-survey operations not finished when the *Oyster* was there in the spring. And it was not until August 13, 1909, when the house boat was shifted back to Eastern Bay, near the southern entrance to Kent Narrows, that the work in Queen Annes County was resumed. The *Oyster* remained at this latter anchorage as headquarters for the field work for only two weeks, during which period Governor Crothers, of Maryland, and party visited the house boat and thoroughly examined into the manner and methods by which the work was being conducted.

On August 28, 1909, the *Oyster* was towed to Haddaway Cove, in Talbot County, and work was not resumed in Queen Annes County until October 16, 1909, when the house boat was towed back to Eastern Bay and tied up at the railway wharf at Claiborne. From this latter point as headquarters the triangulation of Eastern Bay and its northern tributaries to the west of Kent Narrows was practically completed.

On October 29, 1909, the *Oyster* moved to an anchorage in a branch of lower Miles River called Tilghmans Creek and the next day completed a month's field work, which was notable as far as triangulation was concerned on account of there having been established, marked, described, and located by theodolite observations over 100 tertiary triangulation stations. Two small parties were engaged on this work during this month, one living on the house boat at Claiborne and the other on shore at Cambridge.

On December 1, 1909, the house boat *Oyster* was moved from Tilghmans Creek to an anchorage off the town of St. Michaels, and from this harbor the remaining triangulation of Wye and Miles rivers was practically completed.

On December 21, 1909, active field work of the Maryland Shell Fish Commission was closed at St. Michaels, but a triangulation signal building party continued work from quarters on shore at Oxford for two days longer.

On December 24, 1909, the field season for the Coast and Geodetic Survey parties was officially closed, the monthly employees remaining on the house boat *Oyster* at Baltimore preparing to lay up the launches and small boats for the winter, and all the officers being on leave from the 25th to 31st.

No further field work was done in Queen Annes County until March 14, 1910, when a small party was put in the field to complete certain necessary details of triangulation in Queen Annes and Talbot counties. This party first went to St. Michaels and then to Oxford, where it joined the main party on the house boat about the end of April.

The next and last field work in Queen Annes County covered only a few days' period, commencing November 7, 1911, when an officer was detailed to check up and obtain certain details relating to the description of triangulation stations required for the technical publication covering the survey of oyster bars of Queen Annes and Talbot counties.

The office work connected with the oyster survey of Queen Annes County, including compilations of geographic information and drafting necessary for the preparation for publication of the oyster charts and the technical records of that county, was continued intermittingly with the office work of other counties from the beginning of the field work in Queen Annes County to the time of filing of the certified oyster charts and technical publications in the archives of the Maryland Shell Fish Commission and with the clerk of the circuit court of Queen Annes County on November 28, 1911.

STATISTICS.¹

Landmarks and triangulation signals erected.....	186
Monuments planted to mark triangulation stations.....	183
Triangulation stations occupied for observations of horizontal angles.....	178
Old triangulation stations recovered.....	15
New triangulation stations established.....	184
Total old and new triangulation stations marked and described.....	199
Linear miles of shore line covered by triangulation (approximate).....	240
Square miles covered by triangulation (approximate).....	500
Hydrographic projections prepared and completed as records of oyster boundaries.....	12
Triangles computed.....	380
Geographic positions computed.....	190
Corners of oyster boundaries established by computation.....	540
Back azimuths and distances computed from corners of boundaries to triangulation stations.....	1, 620
Descriptions of triangulation stations prepared for publication.....	199
Descriptions of oyster boundaries prepared for publication.....	98
"Charts of Natural Oyster Bars" prepared for publication.....	4
Progress map prepared for publication.....	1

GENERAL REMARKS.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore, of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unflinching tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the Commission, who, as editor of the Commission's annual report and commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Mr. Benjamin K. Green, treasurer of the Commission, who has looked after the equipment and commissary of the house boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Mr. Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

¹ These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of this county, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland. See Appendix D of this publication for "Statistics of results of combined operations of the Government and the State."

CHARTS AND MAPS.¹

CHARTS OF NATURAL OYSTER BARS.

The charts of the natural oyster bars of Queen Annes County published by the Coast and Geodetic Survey from results of the surveys of the Government in cooperation with the Maryland Shell Fish Commission consist of four sheets covering all the oyster-producing waters of that county. They are published on the large scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inches to a statute mile) and are constructed on polyconic projections; and all information shown on them is based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the circuit court of Queen Annes County and in the office of the Maryland Shell Fish Commission, as required by the oyster laws of Maryland.

In addition to the oyster bar and other boundaries, the charts show the location and name of all landmarks (United States Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography² necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the heading "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a particular oyster bar or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be indicated. To find the name of a bar or

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² Much of the detail of the inshore topography was obtained from the excellent map of Queen Annes County, prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the United States Geological Survey.

landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shell fish industries. The 1-fathom contour (6 feet) and the 5-fathom curve (30 feet) correspond in a general way to the inner and outer limits of all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars, and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with Queen Annes County are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart within the boundaries of the different shell fish bottoms.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Queen Annes County, like those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, St. Marys, Baltimore, and Kent counties, have been prepared under the direction of the hydrographic engineer of the Commission. They are constructed on polyconic projections on the scales of 1 part in 5,000 or 1 part in 10,000 as the needs of oyster culture may require, and the information shown on them is based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to the area under consideration, and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as possible.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in the Marine Bank Building at Baltimore.

PROJECTIONS.

The polyconic projections ¹ covering Queen Annes County waters are 12 in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, but the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission were plotted by the draftsman of the Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the archives of the Shell Fish Commission.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the United States Coast and Geodetic Survey in Queen Annes County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress maps ² accompanying the first and second annual reports of the Maryland Shell Fish Commission were prepared under the direction of the hydrographic engineer of the Commission. They are on the scale of 1 part in 400,000, and show the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey.

¹ For the scheme of these projections see the progress map at the end of this publication.

² These maps and reports can be obtained by application to Maryland Shell Fish Commission, Marine Bank Building, Baltimore, Md.

BOUNDARIES OF THE COUNTY WATERS.¹

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than 10 acres situated within the territorial limits of any of the counties, or 100 acres in any other place."

The boundary line² between the waters "within the territorial limits" of Queen Annes County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the "oyster" charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Commencing at the intersection of the State boundary line between Maryland and Delaware with the boundary line between Queen Annes County and Kent County; thence following the boundary between Queen Annes and Kent counties and down the channel boundary of the upper part of Chester River; thence continuing down the channel of Chester River following the boundary line between Kent County and Queen Annes County as laid down on "Charts Nos. 29 and 30, Natural Oyster Bars, Maryland," to a point in the mouth of Chester River defined by the intersection of this channel boundary line with a straight line across the mouth of Chester River defined at its western end by a point on Love Point on the western side of Chester River in latitude $39^{\circ} 02' 25.5''$ and longitude $76^{\circ} 18' 10.0''$, and defined at its eastern end by a point on the eastern side of Chester River in latitude $39^{\circ} 02' 45.3''$ and longitude $76^{\circ} 14' 05.3''$; thence in a straight line ending at a point situated on Love Point on the western side of Chester River defined by latitude $39^{\circ} 02' 25.5''$ and longitude $76^{\circ} 18' 10.0''$; thence along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay, around Bloody Point to a point situated on Kent Point on the southern extremity of Kent Island defined by latitude $38^{\circ} 50' 05.1''$ and longitude $76^{\circ} 22' 06.2''$; thence in a straight line ending at a point situated on Wades Point on the eastern side of the entrance of Eastern Bay, defined by latitude $38^{\circ} 49' 34.2''$ and longitude $76^{\circ} 18' 04.5''$ to a point on this straight line defined by its intersection with the boundary line in Eastern Bay between Queen Annes County and Talbot County as laid down on "Chart No. 31, Natural Oyster Bars, Maryland;" thence along the boundary line between Queen Annes County and Talbot County in Eastern Bay, around Tilghmans Point, up Miles River, turning between Bennett Point and Herring Island into the mouth of Wye River, and up the channel boundary line of that branch of Wye River to the south of Wye Island to the point off the eastern end of Wye Island, all as laid down on "Charts Nos. 31 and 32, Natural Oyster Bars, Maryland;" thence continuing up the channel boundary line of Wye River between Queen Annes County and Talbot County to the head of the oyster-producing waters."

¹ For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, Superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

² See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

³ Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the United States Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Baltimore," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county and the waters contiguous to but not within the territorial limits of adjacent counties.

This boundary line has been delineated on the "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and is technically described and defined as follows:

Commencing at a point defined by the intersection of the boundary line between Queen Annes County and Kent County as laid down on "Chart No. 29, Natural Oyster Bars, Maryland," with a straight line across the mouth of Chester River, defined at its eastern end by a point on the eastern side of Chester River in latitude $39^{\circ} 02' 45.3''$ and longitude $76^{\circ} 14' 05.3''$, and defined at its western end by a point on Love Point on the western side of Chester River in latitude $39^{\circ} 02' 25.5''$ and longitude $76^{\circ} 18' 10.0''$; thence following the boundary line between Queen Annes County and Kent County, passing around and about 1 mile to the northeast of Love Point Light, as laid down on "Chart No. 29, Natural Oyster Bars, Maryland," to a point in Chesapeake Bay about $2\frac{5}{8}$ miles east of Baltimore Light and $3\frac{5}{8}$ miles west of Love Point Light, defined by latitude $39^{\circ} 03' 30.0''$ and longitude $76^{\circ} 21' 00.0''$; thence in a straight line with Chesapeake Bay to a point in Chesapeake Bay about $1\frac{3}{4}$ miles east of Sandy Point Light and defined by latitude $39^{\circ} 00' 57.2''$ and longitude $76^{\circ} 21' 34.00''$; thence in a straight line with Chesapeake Bay to a point in Chesapeake Bay about $1\frac{1}{8}$ miles east of Thomas Point Light, defined by latitude $38^{\circ} 53' 56.2''$ and longitude $76^{\circ} 24' 50.2''$; thence in a straight line with Chesapeake Bay to a point in Chesapeake Bay about $2\frac{1}{2}$ miles west of Bloody Point Bar Light defined by latitude $38^{\circ} 50' 01.1''$ and longitude $76^{\circ} 26' 15.0''$; thence in a straight line with Chesapeake Bay to a point in Chesapeake Bay about $3\frac{1}{2}$ miles southwest of Bloody Point Bar Light defined by latitude $38^{\circ} 48' 06.6''$ and longitude $76^{\circ} 26' 37.1''$; thence following the boundary line between Queen Annes County and Talbot County passing between Bloody Point Bar Light and Poplar Island, as laid down on "Chart No. 31, Natural Oyster Bars, Maryland," to a point defined by the intersection of this boundary line with a straight line across the entrance of Eastern Bay defined at its western end by a point situated on Kent Point on the southern extremity of Kent Island in latitude $38^{\circ} 50' 05.1''$ and longitude $76^{\circ} 22' 06.2''$ and defined at its eastern end by a point situated on Wades Point on the eastern side of the entrance of Eastern Bay in latitude $38^{\circ} 49' 34.2''$ and longitude $76^{\circ} 18' 04.5''$.¹

¹ Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION.

The oyster laws of Maryland authorizing the survey to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of location and character of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking a landmark has only an indefinite idea of its location. They gradually proceed from description of the general locality of a landmark to the descriptions of its immediate surroundings. This is followed by specific details of the character of the center and reference marks and a "round" of reference angles and distances which in themselves frequently contain enough information to furnish an independent and reliable location of the triangulation station.

METHOD OF DESCRIBING TRIANGULATION STATIONS.

The separate descriptions of triangulation stations should not be used without reading the following explanation of the method of describing the triangulation stations, as it contains certain details that are common to all the landmarks described in this publication and which are omitted in the separate descriptions as being needless repetitions:

Name.—The title at the top of each separate description is the name by which the landmark or triangulation station is known and designated in all work and published oyster records or oyster charts of both the Government and State. The selection of the name is usually left to the triangulator establishing the station, and it may or may not have geographic or other significance in reference to the locality.

General locality.—Under this heading is given the general locality of the landmark in reference to well-known and prominent natural or artificial features, such as the

nearest body of water, town, river, steamer wharf, well-defined point of land, church, or any other feature that is likely to remain both permanent and prominent.

This heading also covers a reference to the published chart or map which shows the location of the station most clearly. Nearly all the triangulation stations described in this publication are plainly indicated by name and a triangulation symbol on the published charts of oyster bars of Maryland. In this case they are referred to by serial number only, the words "charts of oyster bars of Maryland" being omitted to avoid needless repetition. These published oyster charts are on the large scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inches to a statute mile) and show the location of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Immediate locality.—Under this heading is given the description of the "observed station" in reference to its immediate surroundings. This is supposed to include a statement of the station's estimated elevation above high water or some other well-defined level of the locality, such as a road or house; the character of the ground on which it is located, such as marsh land, sand beach, cultivated field, or meadow; estimated bearings in points of the compass and estimated distances in yards *from* (not *to*) easily recognized features, such as extreme end of point, edge of bluff, bank of creek, line of telephone poles, shore line, barn, house, fence, ditch, trees, or any other definite detail, such as being on range with the tangent of an island and a church; and so forth.

When a standard monument has been established near the station as a "reference station," this heading also covers a statement of the true bearing of the monument in degrees and minutes and its measured distance in meters, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached and might be mistaken for the center mark of the "observed station" unless special attention is called to it.

The distinction between the "observed station" and "reference station" should be carefully noted by anyone making use of the description of stations for any future surveying operations.

The "observed station" is located at the particular triangulation point covered by the description of stations and is the one whose geographic position is first computed, as it is the point which was "occupied" and "observed on" for horizontal angles. However, in spite of the primary importance of the location of the "observed station," it will be noted from the description of stations that frequently it is not marked as well as the "reference station," and in many instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate "observed stations" on edges of banks and ends of points of land, which in the tidewater section of Maryland generally means they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the great need of "reference stations," if the frequent reestablishment of a new framework of triangulation is to be avoided.

The chief reason and need for the establishment of the "reference station," or secondary station, as it might be well named, is explained in the preceding paragraph, but in several instances other reasons, such as the location of the "observed station" on an unstable sand dune, in a cultivated field, in front of a residence, or other places objectionable to the landowner, have led to establishment of "reference stations."

The location of the "reference station" in relation to the "observed station" is fixed for plotting on charts or for computation of its geographic position by checked measurements of its distances and azimuth from the "observed station."¹

Marks.—Under this heading is given a description of the character of the permanent monuments or other marks of the location of the "observed station," and of the "reference station" where one has been established.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground, unless otherwise stated.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

References.—Under this heading are given the "rounds" of directions and distances to all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described, this, if possible, being a lighthouse, church spire, or other permanent and prominent point. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing² of the initial object is always given in parentheses alongside its name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by horizontal angles or for the relocation of corner buoys of oyster-bar boundaries by the method of compass directions described in this publication under the heading of "Boundaries of oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters,"

¹ Geographic coordinates (latitude, longitude, distance, and azimuth) relating to any of the "observed stations" or of the "reference stations" described in this publication can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² The mean magnetic variation for Queen Annes County was $6^{\circ} 15'$ west of north in 1911 and increasing at the rate of $5'$ yearly.

however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of angular measure with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

SWAN POINT 3.

General locality.—Eastern shore of Chesapeake Bay on Swan Point about $5\frac{1}{2}$ miles south-southwest of Tolchester Beach Wharf and 7 miles north of Love Point. (See Chart No. 29.)

Immediate locality.—Observed station is on sand and marsh point about 2 feet above high water, 5 feet east of shore, 60 yards south southwest of a fisherman's cabin, and 250 yards from the extreme end of Swan Point. Cement monument marking old reference station is in marsh 21.43 meters N $89^{\circ} 13'$ E of observed station. Standard cement monument marking new reference station is on line to old reference station 13.26 meters N $89^{\circ} 13'$ E of observed station.

Marks.—Observed station is $\frac{1}{4}$ -inch copper rod set in an 8-inch square cement monument with top about 5 inches below surface of ground. Subsurface mark is the neck of a flask set in cement about 4 feet below the surface. New reference station is center point of triangle on standard cement monument. Old reference station is eastern one of two $\frac{1}{4}$ -inch copper rods in an 8-inch cement monument.

References.—

	"	"	"	
"Love Point Light" (S $2^{\circ} 11'$ W).....	0	00	00	 $5\frac{3}{4}$ miles.
"Baltimore Light".....	46	07	00	 $8\frac{1}{2}$ miles.
Stack on garbage plant at Bodkin Point....	82	21	..	 $8\frac{3}{4}$ miles.
"Seven Foot Knoll Light".....	95	04	50	 7 miles.
Left stack at Sparrow Point.....	111	12	..	 $12\frac{1}{4}$ miles.
"Fort Howard Taller Water Tank".....	112	28	20	 $9\frac{7}{8}$ miles.
"Craighill Channel Light (Front Range)"....	114	59	50	 7 miles.
"Craighill Channel Light (Rear Range)"....	131	46	20	 $8\frac{3}{4}$ miles.
Chimney of cabin.....	203	54	..	 58 yards.
Gable of Rockhall Wharf house.....	264	07	..	 1 mile.
OLD REFERENCE STATION.....	267	02	20	 21.43 meters.
NEW REFERENCE STATION (STANDARD CE- MENT MONUMENT).....	267	02	20	 13.26 meters.
Chimney of house to right of Windmill Point.	292	12	..	 2 miles.
Gable of barn.....	303	49	..	 $2\frac{1}{2}$ miles.
Gable of barn near Wickes Beach.....	340	52	..	 $7\frac{5}{8}$ miles.

BANK.

General locality.—Eastern shore of Chesapeake Bay on western side of entrance to Tavern Creek about $\frac{5}{8}$ mile northeast of Swan Point. (See Chart No. 29.)

Immediate locality.—Observed station is in a cultivated field about 7 feet above high water, 12 yards inshore, and 2 yards from edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	"	"	"	
"Love Point Light" (S $7^{\circ} 27'$ W).....	0	00	00	 $6\frac{1}{8}$ miles.
"Baltimore Light".....	42	32	50	 9 miles.
Nail in blaze in locust tree (3 inches diameter)	56	04	00	 10.39 meters.
Chimney of fishing shack on Swan Point....	71	17	..	 $\frac{1}{2}$ mile.
"Seven Foot Knoll Light".....	88	14	40	 $7\frac{1}{2}$ miles.
West gable of Strong barn.....	153	39	..	 $\frac{3}{8}$ mile.
Southwest corner of Strong house.....	174	09	..	 $\frac{3}{8}$ mile.

References—Continued.

	°	'	"	
Chimney of tenant house.....	212	55	..	¾ mile.
North gable of barn.....	250	47	..	1¾ miles.
Thompson windmill.....	271	47	..	½ mile.
West gable of Rockhall Wharf house.....	274	08	..	¾ mile.
North gable of Downey house.....	278	49	..	½ mile.
Nail in blaze in locust tree (4 inches diameter).....	292	56	20	10.32 meters.
South one of twin trees on Little Neck Island.....	352	59	..	¼ mile.

GRATITUDE.

General locality.—Eastern shore of Chesapeake Bay at eastern side of entrance to Swan Creek opposite middle of Little Neck Island and near old Rockhall Wharf. (See Chart No. 29.)

Immediate locality.—Observed station is on a marsh meadow about 1 foot above high water, 12 yards east of shore, 150 yards southwest of a house, and 400 yards south-southwest of Rockhall Landing.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (S 11° 46' W).....	0	00	00	5¾ miles.
"Sandy Point Light".....	26	05	10	10¾ miles.
"Baltimore Light".....	41	21	20	9¾ miles.
Chimney of fishing shack on Swan Point.....	90	47	..	1 mile.
Left tangent of piles of old Rockhall Wharf.....	124	15	..	200 yards.
West gable of Strong barn.....	130	49	..	¾ mile.
Chimney of tallest wharf house at Rockhall Landing.....	162	15	..	¼ mile.
Chimney of house.....	166	19	..	1 mile.
Post on northwest corner of Downey porch.....	196	57	..	150 yards.
Nail in blaze in cedar tree (10 inches diameter).....	273	02	40	107 yards.
North gable of old barn.....	276	36	..	200 yards.
North gable of barn.....	309	21	..	1¾ miles.

WINDMILL POINT.

General locality.—Eastern shore of Chesapeake Bay on Windmill Point at northern side of entrance to Rockhall Harbor. (See Chart No. 29.)

Immediate locality.—Observed station is on low marsh land about level with high water, about 30 yards back from end of point, and 20 yards south of a group of large pine trees. Cement monument marking reference station is 24.13 meters N 20° 14' E of observed station.

Marks.—Observed station is center point of 2-inch tile pipe filled with sand with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Love Point Light" (S 17° 47' W).....	0	00	00	5½ miles.
Nail in blaze in pine tree (18 inches diameter).....	146	39	30	17.38 meters.
Nail in blaze in pine tree (24 inches diameter).....	178	03	00	23.57 meters.
REFERENCE STATION.....	182	27	00	24.13 meters.
Nail in blaze in pine tree (20 inches diameter).....	216	10	20	16.52 meters.
Rockhall Methodist Episcopal Church spire.....	238	05	40	1 mile.
Highest gable on Sharps Wharf.....	246	42	..	¾ mile.
East chimney of house.....	271	27	..	½ mile.
Chimney of small house.....	287	55	..	¼ mile.
West chimney of small house.....	311	04	..	1 mile.

STEVENS.

General locality.—Eastern shore of Chesapeake Bay about $\frac{1}{4}$ mile south of Huntingfield Point at entrance to Huntingfield Creek. (See Chart No. 29.)

Immediate locality.—Observed station is in a cultivated field about 15 feet above high water, 55 yards back from edge of vertical bank 3 feet higher than station, and 450 yards south of the extreme end of Huntingfield Point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (S 25° 03' W).....	0	00	00	4 $\frac{5}{8}$ miles.
Right tangent of Love Point.....	12	13	..	6 $\frac{1}{2}$ miles.
Southeast corner of fishing shack on Swan Point.....	111	24	..	2 $\frac{1}{2}$ miles.
East gable of Strong barn.....	125	42	..	2 $\frac{1}{2}$ miles.
Thompson windmill.....	135	01	20	2 miles.
Chimney of house.....	150	32	..	1 $\frac{1}{4}$ miles.
Nail in blaze in cedar tree (10 inches diameter).....	155	24	20	200 yards.
Wicks windmill.....	223	16	20	1 mile.
Nail in blaze in locust tree (18 inches diameter).....	227	23	00	110 yards.
Chimney of small house.....	239	58	..	1 mile.
Nail in blaze in persimmon tree (10 inches diameter).....	275	26	20	130 yards.
Chimney of Stevens tenant house.....	320	39	..	$\frac{1}{2}$ mile.

BALTIMORE LIGHT.

General locality.—Western side of Chesapeake Bay off shore about $1\frac{1}{2}$ miles east of mouth of Magothy River and $\frac{1}{2}$ mile west of entrance to dredged channel leading to Baltimore. (See Progress Map.)

Immediate locality.—Observed station is on brick octagonal dwelling on cylindrical foundation known as Baltimore Lighthouse.

Marks.—Observed station is center point of lantern on Baltimore Lighthouse.

References.—None necessary.

SANDY POINT LIGHT.

General locality.—Western side of Chesapeake Bay off shore about $\frac{1}{2}$ mile east of Sandy Point. (See Chart No. 29.)

Immediate locality.—Observed station is on brick dwelling on cylindrical foundation known as Sandy Point Lighthouse.

Marks.—Observed station is center point of lantern on Sandy Point Lighthouse.

References.—

	°	'	"	
"Bodkin Point (Old Tower)" (N 14° 35' W).....	0	00	00	8 $\frac{1}{2}$ miles.

RING.

General locality.—Eastern shore of Chesapeake Bay on western side of Kent Island about $2\frac{1}{4}$ miles south-southwest of Love Point and $3\frac{3}{4}$ miles east of Sandy Point. (See Chart No. 29.)

Immediate locality.—Observed station is in a cultivated field about 20 feet above high water, 12 yards inshore, and 2 yards from edge of bank. Cement monument marking reference station is 9.36 meters N 79° 21' E of observed station.

Marks.—Observed station is center of 4-inch tile pipe with top 3 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Sandy Point Light" (N 84° 56' W).....	0	00	00	3¾ miles.
Cupola on barn.....	117	51	..	1 mile.
South chimney of house.....	141	00	..	¼ mile.
REFERENCE STATION.....	164	17	10	9.56 meters.
Lone tree (2 inches diameter).....	224	10	..	300 yards.
South chimney of house.....	238	56	..	300 yards.

LOVE POINT LIGHT.

General locality.—Eastern side of Chesapeake Bay at entrance to Chester River offshore about 1½ miles northeast of Love Point. (See Chart No. 29.)

Immediate locality.—Observed station is on hexagonal screw pile structure known as Love Point Lighthouse.

Marks.—Observed station is center point of lantern on Love Point Lighthouse.

References.—

	°	'	"	
"Wickes Beach" (S 47° 55' E).....	0	00	00	3½ miles.

AMOUR.

General locality.—Northern end of Kent Island at western side of entrance to Chester River about ¼ mile southeast of Love Point and ¾ mile north of Love Point Landing. (See Chart No. 29.)

Immediate locality.—Observed station is on sand and marsh point about 2 feet above high water, 25 yards inshore, and 55 yards north of fishing shack.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (N 33° 42' E).....	0	00	00	1½ miles.
Left chimney of house.....	28	28	..	4¾ miles.
West gable of house on East Neck.....	48	00	..	3¾ miles.
North gable of barn.....	54	30	..	3¼ miles.
North gable of house on Cedar Point.....	76	30	..	5 miles.
Gable of barn.....	128	18	..	4½ miles.
Left tangent of Kent Island Landing.....	132	59	..	1¾ miles.
Northeast corner of fishing shack.....	140	38	..	57 yards.
Nail in blaze in cedar tree (3 inches diameter).....	174	43	..	12.46 meters.
"Railway Water Tank".....	199	53	50	¾ mile.
Nail in blaze in cedar tree (4 inches diameter).....	206	10	00	11.30 meters.
Nail in blaze in cedar tree (6 inches diameter).....	295	02	00	38.88 meters.

RAILWAY WATER TANK.

General locality.—Northern end of Kent Island about halfway between Chesapeake Bay and Chester River and ¾ mile south by west of Love Point. (See Chart No. 29.)

Immediate locality.—Observed station is on the only large elevated water tank located just north of the center of the bend of the railway that leaves Love Point Landing.

Marks.—Observed station is center point of top of water tank.

References.—None necessary.

WICKES BEACH.

General locality.—Eastern shore of mouth of Chester River on western side of East Neck Island near Wickes Beach. (See Chart No. 29.)

Immediate locality.—Observed station is on a narrow sand beach about on level with high water, 10 yards back from low water, and 2 yards west of swamp which extends back to woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Love Point Light" (N 47° 54' W).....	0	00	00	 3 miles.
Nail in blaze in oak tree (15 inches diameter).....	60	45	40	 300 yards.
Nail in blaze in gum tree (12 inches diameter).....	70	59	00	 250 yards.
Nail in blaze in oak tree (15 inches diameter).....	114	05	50	 200 yards.
North cupola of barn.....	155	15	..	 $\frac{5}{8}$ mile.
Lone tree on Cedar Point.....	178	23	..	 $1\frac{1}{8}$ miles.
East gable of barn.....	200	21	..	 4 miles.
North gable of Jackson wharf house.....	214	26	..	 $4\frac{1}{8}$ miles.
North gable of barn.....	276	32	..	 $3\frac{3}{8}$ miles.
Cupola on farmhouse.....	299	16	..	 $3\frac{1}{8}$ miles.
"Railway Water Tank".....	321	45	00	 $3\frac{3}{8}$ miles.
North flagstaff on Love Point Hotel.....	323	27	..	 $3\frac{3}{8}$ miles.

NARROWS POINT.

General locality.—Northern shore of Chester River on southwest end of East Neck Island, about $\frac{1}{8}$ mile north of Cockey's Island and $\frac{3}{8}$ mile west-northwest of Cedar Point. (See Charts Nos. 29 and 30.)

Immediate locality.—Observed station is on a low marshy point about level with high water, about 7 yards from low water, and 325 yards west of a fishing shack. Cement monument marking reference station is 12.28 meters N 7° 58' E of observed station.

Marks.—Observed station is center of 3-inch tile pipe filled with cement with top 4 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Wickes Beach" (N 46° 58' W).....	0	00	00	 $1\frac{1}{8}$ miles.
REFERENCE STATION.....	64	56	10	 12.28 meters.
Chimney of fishing shack.....	133	08	..	 325 yards.
West gable of Queenstown elevator.....	153	44	..	 $3\frac{1}{4}$ miles.
Cupola on barn.....	164	05	..	 $2\frac{5}{8}$ miles.
North gable of house.....	189	51	..	 $2\frac{1}{2}$ miles.
North gable of barn.....	194	53	..	 $2\frac{1}{2}$ miles.
Cupola on barn.....	216	26	..	 $2\frac{1}{2}$ miles.
North gable of house.....	228	16	..	 $2\frac{3}{4}$ miles.
North gable of house on Jackson Creek.....	231	47	..	 $2\frac{7}{8}$ miles.
East gable of Jackson wharf house.....	233	52	..	 $2\frac{3}{4}$ miles.
North gable of barn.....	254	28	..	 3 miles.
West chimney of house.....	285	16	..	 $3\frac{3}{8}$ miles.
Chimney of house near Macum Creek.....	293	36	..	 $4\frac{1}{8}$ miles.
East chimney of house.....	318	01	..	 $4\frac{1}{4}$ miles.
"Railway Water Tank".....	334	11	40	 $5\frac{1}{4}$ miles.
South flagstaff on Love Point Hotel.....	335	26	..	 $5\frac{1}{8}$ miles.
Flagstaff on Love Point Wharf.....	335	42	..	 $4\frac{3}{4}$ miles.
Right tangent of Love Point.....	341	30	..	 5 miles.

MACUM.

General locality.—Southern shore of Chester River on Kent Island, about $4\frac{1}{2}$ miles south of Love Point Light, 3 miles south-southeast of Love Point Landing and $\frac{1}{2}$ mile north-northwest of Macum Creek. (See Chart No. 29.)

Immediate locality.—Observed station is in cultivated field about 7 feet above high water, 25 yards inshore, and 16 yards south of two cedar trees at edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Love Point Light" (N 0° 19' E).....	0	00	00	 $4\frac{1}{2}$ miles.
North cupola of barn on East Neck Island...	50	41	..	 $3\frac{3}{4}$ miles.
Chimney of house on East Neck Island.....	52	13	..	 $3\frac{3}{4}$ miles.
Nail in blaze in persimmon tree (6 inches diameter).....	57	02	50	 22.24 meters.
South corner of fishing shack on Cedar Point..	72	08	..	 4 miles.
West gable of large barn.....	89	48	..	 5 miles.
Cupola on small house.....	97	00	..	 5 miles.
West gable of house.....	102	15	..	 $4\frac{1}{2}$ miles.
Cupola on barn.....	108	29	..	 3 miles.
Gable of house near Jackson Creek.....	119	26	..	 $3\frac{3}{8}$ miles.
East chimney of brick house.....	195	59	..	 $\frac{1}{4}$ mile.
East chimney of house.....	212	31	..	 1 mile.
Cupola on house.....	221	52	..	 $1\frac{3}{4}$ miles.
East chimney of house.....	225	18	..	 $\frac{5}{8}$ mile.
North chimney of house.....	257	16	..	 400 yards.
Lone cedar tree.....	266	08	..	 500 yards.
Nail in blaze in cedar tree (4 inches diameter)	314	14	30	 30.98 meters.
"Railway Water Tank".....	333	17	20	 $3\frac{1}{2}$ miles.
East gable of wharf house on Kent Island Landing.....	339	28	..	 $1\frac{1}{2}$ miles.
Flagstaff on wharf house on Love Point Landing.....	342	03	..	 $3\frac{1}{8}$ miles.
Chimney of fishing shack.....	343	11	..	 $3\frac{1}{4}$ miles.

THIN.

General locality.—Southern shore of Chester River on western side of entrance to Kent Narrows, about $\frac{3}{4}$ mile north of Narrows railway station. (See Chart No. 29.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 55 yards north of shore, and 55 yards west of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Muddy" (N 37° 55' E).....	0	00	00	 $\frac{7}{8}$ mile.
Smoke pipe on shanty.....	75	13	..	 1 mile.
Large low telegraph pole.....	99	27	..	 $\frac{3}{4}$ mile.
Smoke pipe on slant-roofed shanty.....	107	58	..	 $\frac{5}{8}$ mile.
Near corner of fishing shanty.....	196	21	..	 $\frac{1}{4}$ mile.
Tangent of Long Point.....	356	41	..	 $\frac{3}{4}$ mile.

MUDDY.

General locality.—Southern shore of Chester River on Long Point between Muddy Creek and Jackson Creek about $2\frac{1}{4}$ miles southwest of Cedar Point and $3\frac{1}{2}$ miles west of Queenstown. (See Charts Nos. 29 and 30.)

Immediate locality.—Observed station is on marsh land covered with myrtle bushes, about 2 feet above high water, 7 yards inshore, 25 yards southwest of extreme end of point, and 70 yards north of group of pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Love Point Light" (N 28° 41' W).....	o	oo	oo	6 miles.
East chimney of house.....	34	54	..	$2\frac{3}{4}$ miles.
Lone pine tree on Cedar Point.....	53	36	..	$2\frac{3}{4}$ miles.
South gable of barn.....	79	35	..	$4\frac{1}{2}$ miles.
Cupola on barn.....	103	11	..	3 miles.
Cupola on barn.....	114	53	..	$2\frac{3}{4}$ miles.
West gable of barn.....	134	33	..	$1\frac{3}{4}$ miles.
Chimney of house.....	146	39	..	$1\frac{1}{4}$ miles.
North gable of wharf house on Jackson Creek				
Landing.....	179	21	..	1 mile.
North gable of house.....	182	10	..	$1\frac{1}{4}$ miles.
Chimney of small house.....	202	56	..	$\frac{3}{4}$ mile.
Nail in blaze in pine tree (8 inches diameter).....	221	12	50	63 yards.
Nail in blaze in pine tree (12 inches diameter).....	243	25	oo	67 yards.
South flagstaff of Love Point Hotel.....	339	43	30	$5\frac{1}{2}$ miles.
North gable of wharf house on Love Point				
Landing.....	341	46	..	$5\frac{1}{4}$ miles.
Right tangent of Love Point.....	345	12	..	$5\frac{1}{8}$ miles.

BRIDGE.

General locality.—Southern side of Chester River on western shore of Kent Narrows about $\frac{1}{8}$ mile west of Narrows railway station. (See Charts Nos. 29 and 32.)

Immediate locality.—Observed station is on a telegraph pole at a point about 25 feet above high water, 4 yards south of near rail of railroad, 8 yards west of end of railroad bridge, and 7 yards from tie line of bridge.

Marks.—Observed station is a small staff nailed to telegraph pole.

References.—None necessary.

RAILROAD.

General locality.—Southern side of Chester River on eastern shore of Kent Narrows about $\frac{3}{8}$ mile east-southeast of Narrows railway station and $\frac{1}{4}$ mile south of railroad. (See Charts Nos. 29 and 32.)

Immediate locality.—Observed station is on cultivated land about 8 feet above high water, 35 yards south by west of telephone line on north side of county road, 75 yards east of shanty, and 80 yards north-east of shore of small cove.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Marshy" (S 2° 38' E).....	0	00	00	¾ mile.
Cupola on barn.....	29	36	..	2¼ miles.
Chimney on ell of large house.....	38	04	..	2¾ miles.
Right tangent of shanty.....	96	32	..	75 yards.
South peak of Fisherman Inn.....	118	01	..	¾ mile.
Nail in blaze in tree (8 inches diameter).....	139	44	10	38.07 meters.
Nail in blaze in cherry tree (14 inches diameter).....	163	29	40	27.09 meters.
Nail in blaze in telephone pole No. 2848....	197	15	20	30.33 meters.
Smoke pipe of shanty.....	209	50	..	100 yards.
Near peak of ell-shaped house.....	269	00	..	1¾ miles.
Near peak of house.....	292	19	..	1¾ miles.
Left peak of barn.....	345	37	..	1½ miles.
House in trees.....	354	10	..	1¾ miles.

BLUEBEARD.

General locality.—Eastern shore of Chester River on point at entrance to a small creek about ½ mile northeast of Blunt Creek and 1 mile southwest of entrance to Queenstown Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a low sand beach about 1 foot above high water, 5 yards inshore, 2 yards east of small persimmon tree, 55 yards northeast of a small stream, and 200 yards north-northeast of a pond.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Love Point Light" (N 47° 53' W).....	0	00	00	7 miles.
South gable of house.....	12	03	..	2¾ miles.
Right tangent of piles of Bogle wharf.....	29	48	..	3¾ miles.
Largest of four pine trees on Piney Point....	48	58	..	4 miles.
East chimney of house.....	70	23	..	2¾ miles.
Black beacon at entrance to Queenstown Creek.....	90	23	40	1 mile.
Nail in blaze in swamp-oak tree (4 inches diameter).....	122	01	10	10.60 meters.
Nail in blaze in chestnut tree (18 inches diameter).....	197	34	10	150 yards.
Nail in blaze in oak tree (6 inches diameter). 270	04	20	..	125 yards.
Cupola of barn.....	278	50	..	1½ miles.
East chimney of house.....	279	24	..	1½ miles.
North gable of Jackson Creek landing house. 290	11	..	..	2¾ miles.
East gable of house.....	329	17	..	5¼ miles.
Gable of Love Point wharf house.....	344	08	..	6¾ miles.
Right tangent of Love Point.....	347	46	..	7 miles.

BLAKEFORD.

General locality.—Eastern shore of Chester River about ¾ mile north of Blakeford Point at entrance to Queenstown Creek. (See Chart No. 30.)

Immediate locality.—Observed station is about 15 feet above high water, 8 yards inshore, 2 yards back from top of bank with uniform slope to beach, 25 yards north of gully, and 25 yards south of large sycamore tree at foot of slope.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Rain" (N 74° 56' W).....	0	00	00	17½ miles.
Right tangent of piles of Bogle wharf.....	27	33	..	3 miles.
Nail in blaze in cedar tree (4 inches diameter).....	83	12	10	13.31 meters.
Northwest corner of house in woods.....	155	39	..	300 yards.
West gable of small house.....	174	19	..	¾ mile.
West gable of large barn.....	215	41	..	¾ mile.
West gable of house.....	235	20	..	¾ mile.
Northeast corner of elevator at Queenstown.....	239	21	..	¾ mile.
Nail in blaze in ash tree (15 inches diameter).....	247	00	20	21.30 meters.
First black beacon at entrance to Queenstown Creek.....	294	49	..	½ mile.
Chimney of fishing shack on Cedar Point....	352	26	..	2¾ miles.

RAIN.

General locality.—Western shore of Chester River on Hail Point about 1½ miles south-southeast of Bogle Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is about 5 feet above high water, 3 yards north of shore, and 20 yards northwest of extreme end of point. Cement monument marking reference station is 29.84 meters N 65° 20' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark of reference station is center of 2-inch tile pipe with top 2 inches below base of monument.

References.—

	°	'	''	
"Bluebeard" (S 21° 17' E).....	0	00	00	17½ miles.
Chimney of house.....	11	07	..	2¾ miles.
Cupola on barn.....	33	55	..	2¾ miles.
Chimney of house on Jackson Creek.....	45	07	..	3¾ miles.
Chimney of small house.....	48	32	..	3½ miles.
Chimney of fishing shack.....	101	34	..	¾ mile.
Nail in blaze in pine tree (10 inches diameter).....	119	46	30	15.45 meters.
REFERENCE STATION.....	135	56	20	29.84 meters.
Nail in blaze in pine tree (10 inches diameter).....	147	05	50	18.09 meters.
South gable of house.....	173	28	..	1½ miles.
Right tangent of piles of Bogle Wharf.....	186	59	..	1¾ miles.
Williams water tank.....	255	59	..	2 miles.
Black Beacon at entrance to Queenstown Creek.....	318	01	..	1½ miles.
Cupola on barn.....	338	50	..	1¾ miles.

BREAK.

General locality.—Eastern shore of Chester River on Break Point about ½ mile north of north side of entrance to Tilghmans Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 5 feet above high water, 13 yards inshore, 4 yards from edge of bank, 200 yards north of extreme end of point, and 300 yards west of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Blakeford" (S 23° 21' E).....	0	00	00	1½ miles.
North chimney of house at Queenstown.....	6	55	..	2½ miles.
Chimney of house.....	37	48	..	3¾ miles.
Cupola on barn near Jackson Creek Landing..	49	05	..	4½ miles.
Chimney of small house.....	55	05	..	4½ miles.
Chimney of small house.....	58	35	..	5½ miles.
Chimney of Greens fishing shack.....	84	38	..	1½ miles.
South chimney of house.....	103	42	..	2½ miles.
East gable of house.....	131	23	..	2½ miles.
Right tangent of piles of Bogle Wharf.....	133	30	..	1½ miles.
East chimney of house.....	151	35	..	2½ miles.
East chimney of house.....	176	46	..	3¾ miles.
Williams water tank.....	200	58	..	¼ mile.
Knob on door of fishing shack.....	349	58	..	¼ mile.

OVERTON.

General locality.—Western shore of Chester River on north side of entrance to Durdin Creek and about 100 yards south of Bogle Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 4 yards inshore, 100 yards south of Bogle Wharf, 250 yards southeast of Bogle store, and 300 yards west of Bogle Wharf house. Cement monument marking reference station is 11.26 meters S 73° 06' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Bay Bush Point" (N 5° 13' W).....	0	00	00	1¾ miles.
South gable of barn.....	4	12	..	2¾ miles.
South gable of barn.....	17	21	..	3 miles.
West gable of barn.....	39	13	..	5 miles.
Left tangent of piles of Bogle Wharf.....	73	17	..	300 yards.
Chimney of house.....	119	25	..	2½ miles.
Lower west gable of Queenstown elevator....	138	21	..	3½ miles.
North gable of house.....	140	27	..	3¾ miles.
Right tangent of woods on Hail Point.....	168	59	..	1¾ miles.
REFERENCE STATION.....	256	19	40	11.26 meters.
Chimney of Bogles store.....	289	17	..	250 yards.

FIR.

General locality.—Eastern shore of Chester River on Piney Point about 1½ miles north-northwest of Break Point and ½ mile west of Piney Cove. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land at the extreme end of Piney Point, about on level with high water, and about 4 yards east of shore. Cement monument marking reference station is 10.45 meters S 70° 43' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

Survey of Oyster Bars, Queen Annes County, Md.

References.—

	°	'	"	
"Break" (S 21° 04' E).....	0	00	00	1½ miles.
East chimney of house at Queenstown.....	2	36		4 miles.
Chimney of house.....	24	17		4½ miles.
Gable of barn near Jackson Creek Landing..	34	49		5½ miles.
North gable of house.....	35	17		5½ miles.
Chimney of fishing shack.....	51	41		2¾ miles.
Right tangent of piles of Bogle Wharf.....	71	41		1¼ miles.
Chimney of house.....	77	08		1½ miles.
South chimney of house.....	135	34		1½ miles.
North chimney of house.....	170	54		2¼ miles.
West chimney of house.....	178	00		3 miles.
West gable of barn.....	199	30		3½ miles.
Left tangent of woods.....	226	37		¾ mile.
REFERENCE STATION.....	310	21	10	10.45 meters.
Williams water tank.....	339	41		1¼ miles.

BAY BUSH POINT.

General locality.—Western shore of Chester River on a point about ¼ mile north of entrance to Fryingpan Cove and Churn Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 15 yards inshore, and in front of several persimmon trees. Cement monument marking reference station is 10.16 meters N 80° 13' W of observed station.

Marks.—Observed station is nail in 3-inch cement-filled tile pipe with top 6 inches below surface of ground incased in cement cake bearing the legend "U. S. C. S.—1896." Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Fir" (S 57° 56' E).....	0	00	00	1½ miles.
Williams water tank.....	8	22		2½ miles.
Chimney of house at Queenstown.....	27	17		5½ miles.
West gable of barn.....	35	42		4½ miles.
Left tangent of woods on Hail Point.....	45	58		3¼ miles.
Chimney of Bogle store.....	58	00		1½ miles.
Nail in blaze in persimmon tree (6 inches diameter).....	69	04	00	6.25 meters.
REFERENCE STATION.....	157	43	00	10.16 meters.
Nail in blaze in persimmon tree (8 inches diameter).....	220	45	00	6.20 meters.
West chimney of house.....	244	04		1¼ miles.
East gable of barn.....	262	10		3 miles.
West gable of barn.....	297	51		4½ miles.
West gable of barn.....	316	19		3 miles.

GORDON.

General locality.—Eastern side of Chester River about 55 yards offshore, ¾ mile southwest of entrance to Reeds Creek and ⅞ mile north-northeast of Piney Point. (See Chart No. 30.)

Immediate locality.—Observed station is in about 3 feet of water at high tide, 55 yards offshore, and 300 yards southwest of end of woods and cultivated field. Cement monument marking reference station is 57.49 meters S 71° 15' E of observed station.

Marks.—Observed station is nail in 2-inch by 4-inch pine stub driven with top to high water. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—	°	'	"	
"Fir" (S 25° 18' W).....	0	00	00	7½ mile.
Left tangent of piles of Bogle Wharf.....	15	23	..	2½ miles.
East gable of barn.....	42	41	..	2 miles.
South chimney of house.....	103	30	..	2 miles.
West chimney of Harris house.....	118	39	..	2¾ miles.
South gable of Strong tenant house.....	129	39	..	3 miles.
South chimney of house.....	145	25	..	3 miles.
Spindle on Brown house.....	167	02	..	3½ miles.
South gable of cornerib.....	197	36	..	3 miles.
Nail in blaze in pine tree (10 inches diameter).....	252	39	30	57.93 meters.
REFERENCE STATION.....	263	26	40	57.49 meters.
Nail in blaze in pine tree (18 inches diameter).....	286	55	40	57.02 meters.

BIRD.

General locality.—Eastern shore of Chester River on Gordon Point at southwest side of entrance to Reeds Creek about 1½ miles southwest of Holton Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a marsh meadow about 2 feet above high water and 75 yards west of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—	°	'	"	
"Crow" (S 14° 23' W).....	0	00	00	¾ mile.
Lone pine tree (12 inches diameter).....	69	59	..	300 yards.
North chimney of house.....	85	13	..	3¼ miles.
South gable of barn.....	115	56	..	2⅞ miles.
Northwest corner of house.....	230	16	..	¾ mile.
North chimney of house.....	300	01	..	1 mile.
North gable of house.....	343	41	..	1½ miles.
Windmill.....	358	43	..	1½ mile.
Chimney of house.....	359	09	..	¾ mile.

CROW.

General locality.—Eastern side of Chester River on western shore of Reeds Creek about ½ mile south of extreme end of Gordon Point. (See Chart No. 30.)

Immediate locality.—Observed station is in yard of tenant house about 4 feet above high water, 12 yards west of shore, 5 yards south of a pear orchard, and 7 yards north of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—	°	'	"	
"Bird" (N 14° 23' E).....	0	00	00	¾ mile.
South gable of house near Cliffs Landing.....	3	03	..	3¾ miles.
South gable of barn.....	36	18	..	1¼ miles.
Cupola of barn.....	73	23	..	1½ miles.
Northeast corner of Carnell tenant house.....	99	01	30	8.71 meters.
Northwest corner of Carnell tenant house.....	128	43	10	6.65 meters.
Northeast corner of barn.....	198	25	20	14.06 meters.
Northwest corner of barn.....	221	37	10	12.68 meters.

GROVE.

General locality.—Eastern side of Chester River on a point between Reeds Creek and Grove Creek about $\frac{1}{2}$ mile southeast of Gordon Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a meadow about 2 feet above high water, 26 yards south of shore, 8 yards west of three persimmon trees, and 35 yards west of a pond.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Reeds" (N 20° 32' E).....	0	00	00	$\frac{1}{2}$ mile.
East chimney of house.....	13	06	..	$\frac{3}{4}$ mile.
South gable of barn.....	19	41	..	$\frac{3}{4}$ mile.
Nail in blaze in persimmon tree (6 inches diameter).....	53	05	50	10.98 meters.
Cupola on barn.....	75	58	..	$\frac{5}{8}$ mile.
Cupola on Wright barn.....	108	16	..	$\frac{3}{4}$ mile.
North gable of barn.....	168	50	..	$\frac{5}{8}$ mile.
East gable of house.....	181	32	..	$\frac{3}{4}$ mile.
South gable of house.....	230	54	..	$\frac{1}{2}$ mile.
Lone pine tree on Gordon Point.....	282	13	..	$\frac{1}{2}$ mile.
Cupola on barn.....	316	04	..	4 miles.
South chimney of house.....	326	13	..	4 miles.
Nail in blaze in sassafras tree (5 inches diameter).....	338	48	40	10.34 meters.

REEDS.

General locality.—Eastern shore of Chester River at northeast side of entrance to Reeds Creek and about $\frac{5}{8}$ mile south of Robins Cove. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 2 feet above high water, 34 yards east of shore, 9 yards north of ditch draining swamp, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bird" (S 62° 26' W).....	0	00	00	$\frac{1}{2}$ mile.
East chimney of Harris house.....	60	07	..	$3\frac{1}{8}$ miles.
Chimney of house.....	101	57	..	$3\frac{1}{4}$ miles.
East chimney of Brown house.....	112	01	..	3 miles.
Chimney of cabin.....	186	55	..	300 yards.
Cupola on barn.....	276	35	..	$1\frac{1}{4}$ miles.
North gable of house.....	316	12	..	$1\frac{3}{8}$ miles.
Chimney of house.....	337	46	..	$\frac{7}{8}$ mile.

LITTLE GUM.

General locality.—Western shore of Chester River on Little Gum Point at southwest side of entrance to Grays Inn Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 2 yards south of shore, and 12 yards southeast of a 4-foot ditch. Cement monument marking reference station is 40.97 meters N 33° 31' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe with top flush with surface of ground. Subsurface mark is 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Weeks" (N 29° 53' W).....	0	00	00	3½ mile.
East gable of old house on opposite shore....	29	45	..	1 mile.
South chimney of house.....	81	38	..	1 mile.
South gable of house near Cliffs Landing.....	93	34	..	3¼ miles.
North gable of barn.....	115	23	..	3¼ miles.
North gable of barn.....	130	38	..	3¼ miles.
South gable of barn.....	170	12	..	2¾ miles.
Left tangent of Gum Point.....	212	10	..	5½ mile.
North gable of barn.....	220	28	..	¾ mile.
South chimney of Harris house.....	347	39	..	¾ mile.
REFERENCE STATION.....	356	22	00	40.97 meters.

INN.

General locality.—Eastern shore of Grays Inn Creek about ⅓ mile northwest of Chester River and ½ mile southeast of Island Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a peach orchard about 4 feet above high water and 25 yards northeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 3 inches below base of monument.

References.—

	°	'	"	
"Holton Point" (S 72° 50' E).....	0	00	00	2½ miles.
Nail in blaze in sycamore tree (30 inches diameter).....	13	24	30	4.53 meters.
North cupola on barn.....	38	57	..	2½ miles.
Left tangent of woods on Hail Point.....	74	54	..	4½ miles.
East gable of Swatska barn.....	101	19	..	1¼ miles.
East chimney of house.....	119	02	..	½ mile.
East gable of Harris house.....	150	53	..	5½ mile.
East gable of small house.....	175	15	..	5½ mile.
Nail in blaze in peach tree (8 inches diameter).....	252	41	50	11.71 meters.
Southwest corner of Earle bathhouse.....	359	28	..	3 miles.

HOLTON POINT.

General locality.—Eastern shore of Chester River on Holton Point at south side of entrance to Corsica River. (See Chart No. 30.)

Immediate locality.—Observed station is on low sand beach about on level with high water and ¼ mile west of small bathhouse. Cement monument marking reference station is 5.40 meters S 48° 06' E of observed station.

Marks.—Observed station is nail in 3-inch cement-filled tile pipe with top about 6 inches below surface of ground, incased in cement bearing the legend "U. S. C. S.—1896." Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Bay Bush Point" (S 64° 15' W).....	0	00	00	2½ miles.
East chimney of house.....	19	49	..	3 miles.
Chimney of small house.....	27	23	..	3 miles.
East gable of barn.....	38	39	..	3½ miles.
East gable of small house.....	57	08	..	2¼ miles.
South gable of barn.....	97	37	..	2½ miles.
South gable of house.....	80	00	..	2½ miles.

References—Continued.

	°	'	"	
East chimney of house.....	94	17	..	1¾ miles.
West chimney of house.....	130	52	..	2 miles.
South gable of cornerib.....	157	14	..	5/8 mile.
West gable of barn.....	184	04	..	1 mile.
REFERENCE STATION.....	247	38	20	5.40 meters.
Nail in blaze in persimmon tree (4 inches diameter).....	321	38	00	28.35 meters.
North gable of barn.....	329	38	..	2½ miles.
North gable of barn.....	343	06	..	4¾ miles.
East gable of barn.....	357	02	..	4¼ miles.

EARLE.

General locality.—Southern shore of Corsica River on Town Bar Point about ½ mile east of Chester River and 100 yards north of Earle Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 5 yards south of shore, 19 yards north of a pond, and 100 yards north of Earle Wharf.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hydrographic" (S 64° 38' E).....	0	00	00	1½ mile.
Lone sycamore tree.....	10	43	..	½ mile.
East chimney of house.....	18	56	..	½ mile.
Southeast pile at end of Earle Wharf.....	48	59	..	100 yards.
Nail in blaze in locust tree (5 inches diameter).....	63	18	00	12.92 meters.
Nail in blaze in locust tree (3 inches diameter).....	87	58	50	11.07 meters.
Earle windmill.....	118	07	..	300 yards.
East gable of barn.....	165	21	..	3¾ miles.
East gable of small house.....	179	26	..	2¾ miles.
Church steeple at Crosby.....	196	20	..	3¾ miles.
South gable of Brown house.....	209	09	..	2¼ miles.
West chimney of house.....	244	53	..	5/8 mile.
South gable of Emory barn.....	298	08	..	¾ mile.
West chimney of house.....	338	10	..	1¾ miles.

HYDROGRAPHIC.

General locality.—Southern shore of Corsica River about 1½ miles east of Chester River and ½ mile east of Earle Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is near edge of cultivated field about 3 feet above high water, 20 yards south of shore, 4 yards south of edge of bank 3 feet high, and 400 yards north of lone sycamore tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Earle" (N 64° 37' W).....	0	00	00	5/8 mile.
Church steeple at Crosby.....	14	03	..	4¼ miles.
East gable of barn.....	19	13	..	3½ miles.
South gable of barn.....	33	12	..	¾ mile.
South gable of Emory barn.....	73	18	..	5/8 mile.

References—Continued.

	°	'	"	
Southwest corner of Emory Wharf house.....	75	44	..	1½ mile.
West gable of barn.....	114	51	..	¾ mile.
West gable of barn.....	135	37	..	1½ miles.
West chimney of house.....	148	56	..	1¼ miles.
East chimney of house.....	231	23	..	¾ mile.
Nail in blaze in apple tree (12 inches diam- eter).....	327	14	30	16.00 meters.
Southeast corner of Earle Wharf house.....	354	51	..	½ mile.

RUTH.

General locality.—Southern shore of Corsica River about 1½ miles east of Chester River and ⅓ mile northwest of entrance to Tilghmans Cove. (See Chart No. 30.)

Immediate locality.—Observed station is in cultivated field about 15 feet above high water, 10 yards south of shore, 2 yards west of edge of slope, and 6 yards south of edge of slope.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hydrographic" (N 82° 13' W).....	0	00	00	¾ mile.
East chimney of Earle tenant house.....	0	11	..	1 mile.
South gable of Sissel barn.....	36	30	..	1 mile.
Southeast corner of Emory Wharf house.....	54	13	..	¾ mile.
South gable of Emory barn.....	60	05	..	¾ mile.
Chimney of Emory house.....	64	17	..	¾ mile.
East post of front porch of house.....	109	34	..	¾ mile.
Nail in blaze in oak tree (24 inches diameter). ..	119	49	10	9.98 meters.
Nail in blaze in cedar tree (6 inches diam- eter).....	223	53	20	14.30 meters.
East gable of small barn.....	308	56	..	¾ mile.
Lone sycamore tree.....	319	36	..	¾ mile.

MELFIELD.

General locality.—Southern shore of Corsica River about 1½ miles east of Chester River, 1 mile southeast of Emory Wharf, and ⅓ mile east of entrance to Tilghmans Cove. (See Chart No. 30.)

Immediate locality.—Observed station is in cultivated field about 18 feet above high water, 10 yards south of shore, 5 yards south of edge of bluff, and 10 yards west of a ravine.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ruth" (N 71° 32' W).....	0	00	00	¾ mile.
East gable of barn.....	11	02	..	5 miles.
Left tangent of Emory Wharf.....	29	50	..	¾ mile.
East chimney of Emory house.....	38	10	..	1 mile.
Southwest corner of house.....	74	26	..	¾ mile.
Cupola on Emory Wharf house.....	96	53	..	1½ miles.
Nail in blaze in walnut tree (8 inches diam- eter).....	119	34	10	3.81 meters.
Nail in blaze in gum tree (7 inches diameter). ..	179	56	10	16.18 meters.
West gable of barn.....	195	19	..	¾ mile.
Nail in blaze in locust tree (6 inches diam- eter).....	336	32	10	13.85 meters.
South chimney of Earle house.....	350	42	..	1¾ miles.

BATH.

General locality.—Southern shore of Corsica River on Wash Point about 2 miles east of Chester River, $\frac{1}{2}$ mile west of Rocky Point, and $\frac{1}{4}$ mile southeast of Ship Point. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 15 yards east of shore, 13 yards west of a pond, and surrounded by dense growth of bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 8 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Melfield" (S 30° 54' W).....	0	00	00	 $\frac{1}{2}$ mile.
Left tangent of peak of barn.....	24	38	..	 1 mile.
Earle windmill.....	53	43	..	 $1\frac{3}{4}$ miles.
Left edge of Earle Wharf house.....	56	38	..	 $1\frac{1}{2}$ miles.
East chimney of house.....	86	14	..	 1 mile.
South chimney of house.....	120	55	..	 $\frac{3}{8}$ mile.
West chimney of house.....	217	12	..	 $\frac{3}{4}$ mile.
North one of two cedar trees on hill.....	267	01	..	 $\frac{1}{4}$ mile.
Nail in blaze in hackberry tree (12 inches diameter).....	326	23	50	 3.06 meters.
Nail in blaze in pear tree (15 inches diameter).....	345	11	50	 6.79 meters.

SHIP.

General locality.—Northern shore of Corsica River on Ship Point at west side of entrance to Emorys Creek, about $1\frac{1}{4}$ miles east of Chester River, and $\frac{5}{8}$ mile east of Emory Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point covered with bushes about 1 foot above high water, 6 yards west of shore, and 75 yards south of a cedar tree covered with grape vines.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ruth" (S 39° 11' W).....	0	00	00	 $\frac{5}{8}$ mile.
North gable of barn.....	3	22	..	 $\frac{3}{4}$ mile.
Earle windmill.....	40	59	..	 $1\frac{1}{2}$ miles.
Left edge of Earle Wharf house.....	43	35	..	 $1\frac{1}{4}$ miles.
East gable of barn.....	128	34	..	 $\frac{1}{4}$ mile.
Nail in blaze in cedar tree (7 inches diameter).....	144	33	30	 12.52 meters.
West gable of barn.....	217	05	..	 $1\frac{1}{4}$ miles.
West chimney of house.....	220	00	..	 $1\frac{1}{4}$ miles.
North chimney of house.....	229	59	..	 $1\frac{1}{4}$ miles.
West chimney of house.....	251	20	..	 $\frac{3}{4}$ mile.

ENGINEER.

General locality.—Northern shore of Corsica River about 1 mile east of Chester River, $\frac{5}{8}$ mile north-east of Earle Wharf, and 50 yards west of Emory Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 12 yards north of shore, 50 yards west of Emory Wharf, and 50 yards southeast of a pond.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ruth" (S 29° 36' E).....	0	00	00	5/8 mile.
East chimney of house.....	29	31	..	3/8 mile.
Nail in blaze in pear tree (6 inches diameter).....	70	38	40	99.95 feet.
Earle windmill.....	90	13	..	3/8 mile.
Lone cedar tree.....	165	42	..	125 yards.
South gable of Emory barn.....	219	59	..	300 yards.
East chimney of Emory house.....	257	47	..	250 yards.
West chimney of house.....	317	59	..	1 1/8 miles.
Northeast corner of Emory Wharf house.....	321	35	..	156.94 feet.

SWEPSON.

General locality.—Northern shore of Corsica River opposite Town Bar Point about 1/2 mile east of Chester River, 3/8 mile north of Earle Wharf, and 3/8 mile west of Emory Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 12 yards north of shore, 10 yards south of lone cedar tree, and 12 yards east of small ditch draining swamp.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hydrographic" (S 32° 06' E).....	0	00	00	1/2 mile.
East chimney of house.....	6	32	..	3/4 mile.
Chimney of house.....	44	28	..	1/2 mile.
Earle Windmill.....	71	46	..	1/2 mile.
Nail in blaze in cedar tree (15 inches diameter).....	230	15	30	9.50 meters.
South gable of Emory barn.....	282	58	..	1/2 mile.
West gable of barn.....	332	36	..	1 3/4 miles.
North chimney of small house.....	355	19	..	1 1/2 miles.
Chimney of small house.....	357	28	..	2 1/2 miles.

CORSICA.

General locality.—Eastern shore of Chester River at north side of entrance to Corsica River about 3/8 mile south of Lower Spaniard Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 7 feet above high water, 16 yards east of shore, 11 yards east of edge of bank, and 5 yards south of young peach orchard.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Swepson" (S 54° 31' E).....	0	00	00	1/2 mile.
North chimney of house.....	19	17	..	1 1/4 miles.
Earle windmill.....	52	39	..	3/4 mile.
Northeast corner of Earle bathhouse.....	54	01	..	3/4 mile.
Left tangent of woods on Gordon Point.....	93	59	..	2 3/4 miles.
Chimney of small house.....	145	49	..	3 3/8 mile.
South gable of barn.....	187	43	..	2 1/2 miles.
West gable of cornerib.....	318	25	..	1/2 mile.
Locust tree (24 inches diameter).....	359	07	..	150 yards.

DEEP COVE.

General locality.—Western shore of Chester River on point at west side of entrance to Langford Creek and south side of entrance to Deep Cove. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 10 yards inshore, 50 yards east of a dead tree 2 feet in diameter, 80 yards southeast of a tall poplar tree, and 300 yards east of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Gordon" (S 6° 44' E).....	0	00	00	2¾ miles.
East pine tree of group on Piney Point.....	5	25	..	3½ miles.
Spindle on gable of barn.....	47	08	..	1¾ miles.
Lone poplar tree.....	59	20	..	¼ mile.
Northeast corner of Ashley house.....	87	57	..	300 yards.
Southeast corner of fishing shack.....	124	34	..	200 yards.
Lone pine tree.....	136	01	..	¼ mile.
South gable of house.....	193	59	..	1½ miles.
West chimney of house.....	200	47	..	1½ miles.
West gable of barn.....	243	30	..	1 mile.
North chimney of house at Cliffs Landing....	256	16	..	2 miles.
North gable of barn.....	288	41	..	2¾ miles.
Southwest corner of Earle bathhouse.....	307	09	..	2¾ miles.
North gable of barn.....	355	07	..	2¾ miles.

LANGFORD.

General locality.—Western shore of Chester River on Nichols Point at east side of entrance to Langford Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a sandy point among persimmon trees about 2 feet above high water, 12 yards inshore, and 200 yards south of a marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Gordon" (S 10° 42' W).....	0	00	00	2¾ miles.
East one of group of four pine trees.....	2	21	..	3½ miles.
East chimney of house.....	45	45	..	2½ miles.
Chimney of small house.....	56	27	..	2¼ miles.
Nail in blaze in persimmon tree (6 inches diameter).....	72	02	30	4.59 meters.
East chimney of house.....	87	27	..	1 mile.
South gable of barn.....	115	53	..	1¾ miles.
South chimney of house.....	141	02	..	1½ miles.
Chimney of house.....	152	40	..	1½ miles.
Nail in blaze in persimmon tree (6 inches diameter).....	218	39	20	2.23 meters.
Nail in blaze in persimmon tree (4 inches diameter).....	287	15	30	7.63 meters.
Northwest corner of Earle bathhouse.....	299	00	..	1¾ miles.
Cupola on barn.....	332	26	..	2 miles.
North gable of house.....	346	57	..	2¼ miles.

SPANIARD POINT 2 UPPER.

General locality.—Southeastern shore of Chester River on Lower Spaniard Point about 1¼ miles east of Nichols Point, ¾ mile south of Cliffs Landing, and ½ mile southwest of Spaniard Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a sand beach about 1 foot above high water, 8 yards southeast of shore, and 300 yards northwest of woods. Cement monument marking reference station is 11.72 meters S 70° 51' E of observed station.

Marks.—Observed station is nail in 3-inch cement-filled tile pipe bearing the legend "U. S. C. S.—1896," with top 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Langford" (N 87° 27' W).....	0	00	00	1¼ miles.
South gable of barn.....	2	44	..	27½ miles.
East gable of barn.....	16	10	..	2¾ miles.
Church steeple.....	29	25	..	3 miles.
West chimney of Brown house.....	37	38	..	1¾ miles.
West chimney of house.....	76	08	..	1 mile.
Right tangent of piles of Cliffs Landing.....	100	40	..	¾ mile.
South gable of house.....	101	05	..	1½ miles.
"Westcotts Windmill".....	117	31	..	2¼ miles.
REFERENCE STATION.....	196	36	50	11.72 meters.
North gable of barn.....	295	57	..	3 miles.
Right tangent of woods on Gordon Point....	302	00	..	3 miles.
East chimney of house on Grays Inn Creek..	352	39	..	3¾ miles.

QUAKER.

General locality.—Western shore of Chester River in Cliff Bight about ¾ mile north of Nichols Point. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 3 feet above high water, 8 yards north-west of shore, 8 yards southeast of a wire fence and a row of pear trees, and 6 yards south of a group of persimmon trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Brown" (N 80° 42' E).....	0	00	00	7½ mile.
West gable of barn.....	15	05	..	2½ miles.
Left tangent of Spaniard Wharf.....	24	17	..	1¼ miles.
Northeast corner of Earle house.....	70	08	..	2 miles.
North gable of house near Reeds Creek.....	102	24	..	3¼ miles.
Right tangent of woods on Gordon Point....	114	37	..	3½ miles.
Lone oak tree.....	147	43	..	1½ mile.
Nail in blaze in hackberry tree (6 inches diameter).....	203	08	30	4.81 meters.
Nail in blaze in persimmon tree (8 inches diameter).....	319	19	00	3.43 meters.
West chimney of house.....	351	40	..	¾ mile.

EVANS.

General locality.—Southeastern shore of Chester River on Upper Spaniard Point about ⅝ mile south of Cliffs Landing and ⅜ mile northeast of Spaniard Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 10 yards north of shore, and 200 yards east of end of Spaniard Wharf.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Chester" (S 80° 13' E).....	0	00	00	¾ mile.
Lone walnut tree (6 inches diameter).....	106	17	..	200 yards.
South gable of fishing shack near shore.....	136	00	..	½ mile.
"Spaniard Wharf 1896" (old triangulation station).....	124	49	30	2.49 meters.
Right tangent of piles at end of Spaniard Wharf.....	167	23	..	250 yards.

References—Continued.

	°	'	"	
North chimney of house.....	189	26	..	1½ miles.
West chimney of house.....	212	13	..	1½ miles.
Chimney of Martin cabin.....	219	20	..	¾ mile.
North gable of Cliffs Landing house.....	234	31	..	¾ mile.
East chimney of house.....	247	28	..	¾ mile.
North gable of barn.....	276	23	..	1¾ miles.
"Westcott Windmill".....	282	55	10	1¾ miles.
East gable of barn.....	308	31	..	1½ miles.
North gable of barn.....	318	03	..	2¼ miles.
East gable of barn.....	348	39	..	1¾ miles.

BROWN.

General locality.—Northwestern shore of Chester River on Cliffs Point between Cliffs Bight and Commegys Bight about ¼ mile west of Cliffs Landing. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 12 feet above high water, 25 yards north of shore, 7 yards north of edge of bank, and 45 yards southeast of a large cherry tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Deep Point 2" (N 80° 15' E).....	0	00	00	1¾ miles.
West gable of barn.....	4	49	..	2½ miles.
West chimney of house.....	22	55	..	1¾ miles.
North gable of small fishing shack.....	82	04	..	¾ mile.
North gable of barn.....	115	26	..	3½ miles.
Nail in blaze in locust tree (5 inches diameter).....	157	07	10	13.55 meters.
Nail in blaze in walnut tree (15 inches diameter).....	209	09	50	14.13 meters.
East gable of house.....	220	55	..	300 yards.
East gable of barn.....	334	04	..	300 yards.
West chimney of house.....	338	33	..	1½ miles.
Northwest corner of Martin shack.....	343	03	..	77 yards.
West gable of wharf house.....	355	27	..	¼ mile.

STRATTON.

General locality.—Northwestern shore of Chester River at west side of entrance to Commegys Bight near Cliffs Landing and about ¼ mile northeast of Cliffs Point. (See Chart No. 30.)

Immediate locality.—Observed station is on marsh land about on level with high water, 5 feet north of shore, and 21 yards southwest of entrance to a small creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Deep Point 2" (N 83° 53' E).....	0	00	00	1¾ miles.
Cupola on barn.....	7	50	..	2 miles.
West gable of corn crib.....	23	27	..	1½ miles.
Southwest corner of wharf house.....	82	04	..	100 yards.
North gable of house.....	114	03	..	3 miles.
Right tangent of woods on Gordon Point.....	125	14	..	3¾ miles.
Pine tree on line with bulkhead of wharf.....	154	29	..	100 yards.
North chimney of house.....	266	37	..	400 yards.
West gable of Westcott barn.....	319	58	..	1¾ miles.
West gable of barn.....	340	32	..	1¾ miles.

CHESTER.

General locality.—Southeastern shore of Chester River about $\frac{3}{4}$ mile east of Upper Spaniard Point and $\frac{7}{8}$ mile south of Deep Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a low meadow about 2 feet above high water, 10 yards south of shore, 2 yards south of board and wire fence, 2 yards east of rail fence, and 35 yards northwest of gate to front yard of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Evans" (N 80° 12' W).....	0	00	00	$\frac{3}{4}$ mile.
South chimney of house.....	6	21		$2\frac{1}{4}$ miles.
East gable of Cliffs Landing house.....	23	38		$1\frac{1}{8}$ miles.
East gable of house.....	35	11		$1\frac{1}{2}$ miles.
Chimney of house.....	51	47		$1\frac{1}{2}$ miles.
South chimney of Westcott house.....	76	43		$1\frac{3}{8}$ miles.
West gable of barn.....	85	17		1 mile.
Left tangent of piles of Indiantown Wharf.....	116	41		$1\frac{1}{2}$ miles.
South cupola of barn.....	139	37		$1\frac{1}{4}$ miles.
West chimney of Emory house.....	158	45		$\frac{1}{4}$ mile.
West chimney of Emory tenant house.....	218	16		100 yards.
Nail in blaze in persimmon tree (6 inches diameter).....	247	33	10	11.67 meters.
Nail in blaze in locust tree (12 inches diameter).....	328	54	50	24.18 meters.

WESTCOTTS WINDMILL.

General locality.—Northwestern side of Chester River about $\frac{1}{8}$ mile inshore from northern end of Commegys Bight and $1\frac{3}{8}$ miles northeast of Cliffs Landing. (See Chart No. 30.)

Immediate locality.—Observed station is about 35 feet in height on a barn and near a water tank back of barn.

Marks.—Observed station is center point of windmill.

References.—None necessary.

CORPSE.

General locality.—Southeastern shore of Chester River about $\frac{3}{8}$ mile southeast of Deep Point, $1\frac{1}{2}$ miles east-northeast of Spaniard Wharf and $\frac{5}{8}$ mile southwest of Indiantown Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a sanded marsh strip about 1 foot above high water, 3 yards east of shore, 18 yards south-southeast of a point, 43 yards north by east of another point, and $\frac{1}{8}$ mile west of a large house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Chester" (S 39° 24' W).....	0	00	00	$\frac{7}{8}$ mile.
Right tangent of Spaniard Wharf.....	30	29		$1\frac{1}{2}$ miles.
Chimney of house near Cliffs Landing.....	61	43		$1\frac{3}{4}$ miles.
Right peak of house on Deep Point.....	83	48		$\frac{1}{2}$ mile.
Left one of two chimneys on south end of brick house.....	147	03		1 mile.
Left tangent of Indiantown Wharf.....	173	17		$\frac{5}{8}$ mile.
Chimney of ell of house near Indiantown Wharf.....	181	53		$\frac{5}{8}$ mile.
Left tangent of large house.....	228	11		$\frac{1}{4}$ mile.
Right chimney of house.....	297	55		$\frac{1}{8}$ mile.
Chimney outside of old house.....	359	07		$\frac{7}{8}$ mile.

DEEP POINT 2.

General locality.—Northwestern shore of Chester River on Deep Point about $1\frac{1}{4}$ miles east of Cliffs Landing, $1\frac{1}{4}$ miles northeast of Spaniard Wharf, and $\frac{3}{4}$ mile west of Indiantown Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is about 1 foot above high water, among several cedar and poplar trees on a point, 13 yards northeast of shore, 21 yards southwest by west of shore, 40 yards north west of extreme end of point, and 120 yards southeast of a $1\frac{1}{2}$ -story house. Cement monument marking reference station is on line with west end of house 17.14 meters N $53^{\circ} 52'$ W of observed station.

Marks.—Observed station is nail in center of 2-inch tile pipe set in cement with top 2 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	o	/	''	
"Thorn" (N $40^{\circ} 10'$ E).....	0	00	00	$\frac{3}{4}$ mile.
Left chimney of house.....	11	43	..	$3\frac{3}{4}$ miles.
Left tangent of Ashland Wharf.....	13	04	..	$1\frac{3}{8}$ miles.
Near chimney on west peak of house.....	22	58	..	$2\frac{1}{2}$ miles.
Southwest peak of house near Indiantown Wharf.....	31	23	..	$\frac{7}{8}$ mile.
Nail in blaze in branch of cedar tree (15 inches diameter).....	45	27	00	11.48 meters.
Cupola on barn.....	61	43	..	1 mile.
Nail in blaze in poplar tree (11 inches diameter).....	93	54	00	15.02 meters.
Largest one of three chimneys of house.....	102	07	..	$1\frac{1}{4}$ miles.
Chimney of brick house.....	153	25	..	1 mile.
Chimney on near peak of house.....	233	39	..	$1\frac{1}{4}$ miles.
REFERENCE STATION.....	265	58	20	17.14 meters.
Nail in blaze in poplar tree (10 inches diameter).....	266	00	20	17.78 meters.
Right tangent of back of Westcott house.....	279	56	..	120 yards.
Nail in blaze in branch of double tree (8 inches diameter).....	340	43	00	19.74 meters.

INDIAN.

General locality.—Southeastern shore of Chester River near Indiantown Wharf about $\frac{3}{4}$ mile east-northeast of Deep Point. (See Chart No. 30.)

Immediate locality.—Observed station is about 2 feet above high water, 10 yards east of shore end of Indiantown Wharf, 10 yards southeast of shore, 21 yards north of curved fence of yard of a small house, and 40 yards north by west of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Corpse" (S $38^{\circ} 10'$ W).....	0	00	00	$\frac{5}{8}$ mile.
Right tangent of Spaniard Wharf.....	22	40	..	2 miles.
Right chimney of Westcott bungalow.....	34	55	..	$\frac{3}{4}$ mile.
Near corner of wharf house.....	72	50	..	100 yards.
Left tangent of Massey brick house.....	96	48	..	$\frac{1}{2}$ mile.
Large chimney of house beyond trees.....	146	08	..	1 mile.
Chimney of small house near Quaker Neck Wharf.....	161	24	..	$1\frac{1}{4}$ miles.
Left tangent of Ashland Wharf.....	176	19	..	$\frac{5}{8}$ mile.
Lone cedar tree.....	182	24	..	120 yards.
Nail in blaze in cedar tree (12 inches diameter).....	287	43	30	31.24 meters.

References—Continued.

	°	'	"	
Near corner of house.....	288	24	..	5½ mile.
Nail in blaze in cedar tree (10 inches diameter).....	305	59	10	18.68 meters.
Nail in blaze in cedar tree (20 inches diameter).....	319	41	10	30.92 meters.
Right tangent of curved fence.....	324	40	..	40 yards.
Chimney of large house.....	334	58	..	½ mile.

THORN.

General locality.—Northwestern shore of upper Chester River opposite White Cove near Westcott Wharf and about ¾ mile northeast of Deep Point. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 6 feet above high water, 15 yards northwest of shore, 5 yards southwest of corner of board fence, 60 yards south-southeast of a brick house, and 42 yards southwest of piles of old wharf at shore line.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Shippen" (N 43° 17' E).....	0	00	00	½ mile.
Near peak of large house.....	18	40	..	4½ miles.
Left tangent of Ashland Wharf.....	23	21	..	5½ mile.
Corner post of fence (4 inches diameter).....	33	23	10	4.33 meters.
Cupola of barn.....	104	13	..	7½ mile.
Chimney of small house.....	159	09	..	1¾ miles.
Near corner of Massey house.....	208	40	..	½ mile.
Nail in blaze in peach tree (6 inches diameter).....	283	57	22	13.74 meters.
Nail in blaze in fence post (3 inches diameter).....	338	27	20	5.35 meters.

ASHLAND.

General locality.—Southeastern shore of upper Chester River near Ashland Wharf and about ¼ mile northeast of White Cove. (See Chart No. 30.)

Immediate locality.—Observed station is about 1 foot above high water, 5 yards southeast of shore, 32 yards southwest of a fence, and 20 yards west-northwest of persimmon trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Indian" (S 43° 29' W).....	0	00	00	½ mile.
Right tangent of Indiantown Wharf.....	5	44	..	½ mile.
Chimney on ell of Massey house.....	37	46	..	5½ mile.
Chimney of small house.....	116	46	..	¾ mile.
Peak of Quaker Neck Wharf house.....	145	43	..	¾ mile.
Nail in blaze in fence post (4 inches diameter).....	171	12	50	28.80 meters.
Nail in blaze in persimmon tree (3 inches diameter).....	247	22	50	22.81 meters.
Nail in blaze in persimmon tree (3 inches diameter).....	289	34	10	17.29 meters.
Chimney of summer house.....	356	04	..	½ mile.

SHIPPEN.

General locality.—Northwestern shore of Upper Chester River on point at southern side of entrance to Shippen Creek and nearly opposite Ashland Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a sand and marsh point about 1 foot above high water, 6 yards southwest of shore, 12 yards northeast of shore, 15 yards north of extreme end of sand point, and 25 yards southeast of trees along edge of cultivated field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Oyster" (N 38° 22' E).....	0	00	00	¾ mile.
Chimney on left end of house.....	18	37	..	2½ miles.
Peak of barn.....	26	49	..	2¼ miles.
Chimney on end of house.....	27	59	..	2¼ miles.
Chimney on right end of house.....	54	23	..	1 mile.
Left tangent of piles of Ashland Wharf.....	69	40	..	¼ mile.
Chimney on near end of house.....	79	08	..	1 mile.
Spindle on barn cupola.....	135	58	..	1 mile.
Tangent of piles at Indiantown Wharf.....	154	35	..	⅝ mile.
Tangent of Deep Point.....	182	24	..	1¼ miles.
Near chimney of house.....	189	40	..	½ mile.
Nail in blaze in pear tree (12 inches diameter).....	263	35	40	22.59 meters.
Nail in blaze in cedar tree (10 inches diameter).....	292	46	10	20.70 meters.
Near peak of barn.....	341	44	..	⅝ mile.
Smoke pipe on Quaker Neck Wharf house.....	359	56	..	⅝ mile.

BURNS.

General locality.—Southeastern shore of upper Chester River opposite Quaker Neck Wharf, about ½ mile northeast of Ashland Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in meadow land about 1 foot above high water, 10 yards southeast of shore, 50 yards southwest by south of point, 145 yards northeast by east of a fence, and 200 yards northwest of another fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ashland" (S 45° 22' W).....	0	00	00	⅝ mile.
Chimney of house on Westcott Wharf.....	18	36	..	1¼ miles.
South peak of large barn.....	78	48	..	⅝ mile.
Near chimney of Quaker Neck Wharf house.....	89	20	..	½ mile.
Left chimney of old house.....	108	41	..	..
Left tangent of hook-shaped point of marsh.....	183	22	..	½ mile.
Near peak of house.....	196	25	..	1¼ miles.
Windmill.....	234	22	30	¾ mile.
Chimney of house.....	280	56	..	1 mile.
Left chimney of house on Ashland Road.....	323	57	..	1 mile.

OYSTER.

General locality.—Northwestern shore of upper Chester River about ¼ mile northeast of Quaker Neck Wharf and ½ mile southwest of entrance to Jarrets Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in a cultivated field about 20 feet above high water, 8 yards west-northwest of edge of bank, 9 yards north-northwest of edge of bank, 25 yards northeast by north of a cedar tree, 100 yards southwest of lowland, and 115 yards east of fence near a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Jarrett" (N 67° 48' E).....	0	00	00	 ¾ mile.
Left peak of Bookers Wharf house.....	21	00	..	 1½ miles.
Cupola.....	50	14	..	 1 mile.
Windmill.....	50	55	..	 ⅞ mile.
Left chimney of house.....	107	14	..	 1¾ miles.
Cupola on barn.....	123	50	..	 1¾ miles.
Nail in blaze in cedar tree (7 inches diam- eter).....	143	13	30	 24.90 meters.
Smoke pipe of wharf house.....	151	03	..	 ⅞ mile.
Left chimney of house.....	180	43	..	 130 yards.
Left chimney of old house on near side of Jarretts Creek.....	277	29	..	 1½ mile.
Chimney of house among trees.....	309	06	..	 1¼ miles.

STARKLEY.

General locality.—Southeastern shore of upper Chester River about ¾ mile east of Quaker Neck Wharf, and ½ mile southwest of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in meadow land about 1 foot above high water, 10 yards east by south of shore, 33 yards south of first cut in shore, 140 yards north by west of a fence, 145 yards southwest of point where another fence meets shore, and 275 yards south of large cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Burns" (S 61° 34' W).....	0	00	00	 ½ mile.
Left chimney of Quaker Neck Wharf house..	39	02	..	 ⅞ mile.
Right peak of barn.....	66	43	..	 1 mile.
Peak of middle dormer window of large house.	114	30	..	 ¾ mile.
Left peak of large house.....	103	49	..	 1¼ miles.
Left peak of Bookers Wharf house.....	187	48	..	 ½ mile.
Large cedar tree.....	191	11	..	 275 yards.
Spindle on left cupola of barn.....	202	00	20	 ½ mile.
Weathervane on barn.....	320	01	50	 ½ mile.

JARRETT.

General locality.—Northwestern shore of upper Chester River about ¾ mile southwest of Melton Point, ¼ mile east of entrance to Jarretts Creek, and ⅝ mile west of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is about 1 foot above high water, 14 yards north of shore, 50 yards from a short fence at shore, 65 yards west of entrance to slough, and 175 yards from another fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Melton" (N 61° 34' E).....	0	00	00	 ⅝ mile.
Left peak of house on ridge.....	1	35	..	 1½ miles.
Right peak of small house.....	47	58	..	 ¾ mile.
West peak of Bookers Wharf house.....	48	50	..	 ⅝ mile.
Spindle on left cupola on barn.....	96	01	..	 ¾ mile.
Weathervane on cupola on barn.....	125	48	..	 1 mile.
Chimney of house near Indiantown Wharf....	155	29	..	 1¾ miles.
Large chimney of Massey brick house.....	169	16	..	 1½ miles.
Smokepipe of Quaker Neck Wharf house....	182	50	..	 ¾ mile.
Peak of middle dormer window of large house.	299	07	..	 ½ mile.

BOOKER.

General locality.—Southeastern shore of upper Chester River about 175 yards northeast of Bookers Wharf and $\frac{1}{2}$ mile south of Melton Point. (See Chart No. 30.)

Immediate locality.—Observed station is on sanded marsh land about 1 foot above high water, 6 yards southeast of shore, 13 yards east by south of a small point, 30 yards southwest by south of locust trees, 125 yards northwest by north of a house on 20-foot bank, and 140 yards northwest of a creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Starkley" (S $67^{\circ} 55'$ W).....	0	00	00	 $\frac{5}{8}$ mile.
Left chimney of Quaker Neck Wharf house..	17	46	..	 $1\frac{1}{2}$ miles.
Near peak of house in woods.....	53	23	..	 $\frac{3}{4}$ mile.
Peak of middle dormer window on left side of house among trees.....	68	05	..	 $\frac{7}{8}$ mile.
Chimney of house.....	113	38	..	 1 mile.
Nail in blaze in locust tree (4 inches diameter).....	182	23	40	 29.46 meters.
Near peak of house on bank.....	293	48	..	 125 yards.
Right peak of Bookers Wharf house.....	350	47	..	 175 yards.

JOURNEY.

General locality.—Eastern shore of upper Chester River opposite Melton Point about $\frac{1}{2}$ mile northeast of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in cultivated land about 20 feet above high water, 3 yards southeast by east of edge of bank, south of large elm tree, and northeast of several sycamore and locust trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Booker" (S $28^{\circ} 15'$ W).....	0	00	00	 $\frac{1}{2}$ mile.
Right peak of Bookers Wharf house.....	4	24	..	 $\frac{1}{2}$ mile.
Smokepipe of Quaker Neck Wharf house....	41	21	..	 $1\frac{5}{8}$ miles.
Near peak of house with three dormer windows.....	77	01	..	 $\frac{7}{8}$ mile.
Right chimney of $2\frac{1}{4}$ -story house.....	107	02	..	 $1\frac{1}{2}$ miles.
Nail in blaze in elm tree (10 inches diameter).	134	27	40	 22.70 meters.
Large cedar tree in yard near fence.....	187	30	..	 400 yards.
Near peak of old house.....	318	16	..	 200 yards.
Nail in blaze in sycamore tree (8 inches diameter).....	355	05	00	 21.00 meters.

MELTON.

General locality.—Western shore of upper Chester River on Melton Point about $\frac{1}{2}$ mile north of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is about 2 feet above high water, 4 yards south of shore, 40 yards north of shore, 32 yards northwest of extreme end of point, 2 yards northeast of marsh, and 125 yards east-southeast of clump of cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References. —

	°	'	"	
"Pomona" (N 53° 38' W).....	0	00	00	5/8 mile.
Right chimney of house on knoll.....	17	17		1 1/2 miles.
Right peak of roof of building.....	68	07		5/8 mile.
Left chimney of house.....	118	37		7/8 mile.
Northwest chimney of house on bank near Bookers Wharf.....	219	20		1/2 mile.
Northwest peak of Bookers Wharf house....	226	38		1/2 mile.
Smoke pipe of Quaker Neck Wharf house....	296	40		1 1/4 miles.
Near chimney of house with dormer windows.	346	50		5/8 mile.

CAKE.

General locality.—Eastern shore of upper Chester River about 3/8 mile north of Melton Point and 7/8 mile north of Bookers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is in a marsh about 1 foot above high water, 13 yards east-southeast of shore, 35 yards northeast by north of shore, 35 yards northeast of rounded point, 150 yards north-northwest of entrance to a creek, 200 yards south-southwest of buildings, and 300 yards south of a house among trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References. —

	°	'	"	
"Journey" (S 30° 29' E).....	0	00	00	1/2 mile.
Chimney on ell of house to left of trees.....	3	40		5/8 mile.
Northwest peak of Bookers Wharf house....	38	53		7/8 mile.
South chimney of near one of twin houses...	142	49		3/4 mile.
East chimney of brick house among trees on ridge.....	169	16		1 1/2 miles.
South peak of building.....	229	41		3/4 mile.
Large lone tree on ridge.....	299	10		3/4 mile.
Left chimney of large house.....	324	39		3/4 mile.

POMONA.

General locality.—Western shore of upper Chester River about 5/8 mile northwest of Melton Point and 1/2 mile south of entrance to Browns Creek. (See Chart No. 30.)

Immediate locality.—Observed station is among small trees near edge of cultivated field, about 12 feet above high water, 6 yards west of edge of bank, and 8 yards from top of slope to marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References. —

	°	'	"	
"Taste" (N 5° 30' W).....	0	00	00	1/2 mile.
Nail in blaze in locust tree (3 inches diam- eter).....	14	28	20	5.23 meters.
Windmill.....	52	29	30	2 miles.
Right corner of house.....	71	49		1 1/4 miles.
Large lone tree in field.....	93	20		1 1/4 miles.
Left chimney of large house.....	103	47		1 1/2 miles.
Ell of house to left of trees.....	126	48		1 1/2 miles.
Nail in blaze in locust tree (4 inches diam- eter).....	107	10	50	7.74 meters.
Nail in blaze in cedar tree (8 inches diam- eter).....	196	39	40	12.18 meters.
Large cherry tree.....	277	32		300 yards.

BILL.

General locality.—Eastern shore of upper Chester River about $\frac{3}{4}$ mile north of Melton Point and nearly opposite Browns Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in grove of elm, ash, and oak trees on north side of a point about 20 feet above high water, 7 yards south-southeast of edge of bank, 30 yards east-northeast of a small house, and 40 yards west-southwest of a fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cake" (S 15° 41' E).....	0	00	00	 $\frac{3}{4}$ mile.
Right peak of Bookers Wharf house.....	12	04	..	 $1\frac{1}{4}$ miles.
Nail in blaze in elm tree (10 inches diameter).....	20	43	40	 12.37 meters.
Nail in blaze in elm tree (9 inches diameter).....	69	23	10	 9.92 meters.
Nail in blaze in oak tree (24 inches diameter).....	129	28	40	 2.95 meters.
East chimney of brick house.....	137	29	..	 $\frac{3}{4}$ mile.
Peak of sharp roof.....	155	53	..	 $\frac{1}{2}$ mile.
"Robertson Windmill".....	243	52	40	 $2\frac{1}{4}$ miles.
Spindle on peak of house on Rolphs Wharf.....	247	37	40	 $2\frac{3}{4}$ miles.
Nail in blaze in tree (8 inches diameter).....	280	24	50	 7.60 meters.
Left chimney of house on ridge.....	322	17	..	 $\frac{3}{4}$ mile.
Nail in blaze in tree (15 inches diameter).....	343	25	10	 12.30 meters.
Chimney on ell of house.....	349	32	..	 1 mile.

TASTE.

General locality.—Western shore of upper Chester River on point at east side of entrance to Browns Creek, about 1 mile northwest of Melton Point. (See Chart No. 30.)

Immediate locality.—Observed station is on a marsh point between Chester River and Browns Creek, about 5 yards north of shore of Chester River, 30 yards south of shore of Browns Creek, 50 yards south-west of point of shore of Browns Creek, and 55 yards west-southwest of cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Make" (N 52° 14' E).....	0	00	00	 $\frac{3}{4}$ mile.
Windmill.....	7	11	30	 $1\frac{1}{4}$ miles.
Chimney of house.....	25	20	..	 $1\frac{1}{4}$ miles.
Left chimney of house on ridge.....	68	58	..	 $1\frac{1}{4}$ miles.
Chimney on ell of house.....	84	20	..	 $1\frac{1}{4}$ miles.
West chimney of left one of twin houses.....	142	19	..	 $\frac{3}{4}$ mile.
Right chimney of brick house.....	266	13	..	 $\frac{3}{4}$ mile.
Largest cedar tree in clump (15 inches diameter).....	350	28	00	 54 yards.

MAKE.

General locality.—Western shore of upper Chester River about $1\frac{1}{2}$ miles north of Melton Point and $\frac{3}{4}$ mile northeast of entrance to Browns Creek. (See Chart No. 30.)

Immediate locality.—Observed station is in pasture land about 2 feet above high water, 10 yards north of shore, 110 yards west of tangent of point of curve of shore, and 325 yards southeast of farm buildings behind trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Broad" (N 61° 13' E).....	0	00	00	1/2 mile.
Windmill.....	0	22	30	1 1/2 miles.
Near peak of canning house at Wilmers Wharf.....	18	26	..	1 3/8 miles.
Chimney on ell of house on ridge.....	45	45	..	1 1/4 miles.
Left chimney of house on ridge.....	80	05	..	1 1/4 miles.
Spindle on cupola on barn.....	118	55	..	2 1/4 miles.
Left chimney of left one of twin houses.....	155	18	..	3/4 mile.
West chimney of house.....	227	30	..	1 mile.
South peak of building in woods.....	307	04	..	1 mile.

DOWN.

General locality.—Southeastern shore of upper Chester River about 2 miles southwest of entrance to Southeast Creek and 1 mile east of entrance to Browns Creek. (See Chart No. 30.)

Immediate locality.—Observed station is on a small rounded point of sanded marsh about 1 foot above high water, 5 yards south of shore, 40 yards east by south of an inlet, and 95 yards west of a fence beyond trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bill" (S 73° 52' W).....	0	00	00	1/2 mile.
East peak of large barn.....	33	37	..	1 mile.
Chimney of house.....	75	53	..	1 1/2 miles.
"Robertson Windmill".....	138	57	20	1 mile.
Right peak of small house near Rolphs Wharf.....	153	54	..	2 1/4 miles.
Left peak of taller of two barns.....	197	17	..	1/2 mile.
Nail in blaze in cedar tree (5 inches diameter).....	232	06	10	52.50 meters.
Nail in blaze in cedar tree (5 inches diameter).....	253	25	40	47.18 meters.
Nail in blaze in pear tree (3 inches diameter).....	348	29	50	14.34 meters.

JULIUS.

General locality.—Southeastern shore of upper Chester River about 1/2 mile southwest of Wilmers Wharf. (See Chart No. 30.)

Immediate locality.—Observed station is on a sanded grass point fringed by cedar trees and about 2 yards south of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Down" (S 56° 12' W).....	0	00	00	1/2 mile.
Chimney of left one of twin houses.....	10	37	..	1 1/2 miles.
Near peak of large barn.....	37	29	..	1 mile.
Middle one of three large trees.....	39	50	..	7/8 mile.
"Robertson Windmill".....	130	23	30	1 1/4 miles.
South chimney of house at Rolphs Wharf.....	165	38	..	1 5/8 miles.
Weather vane on large barn.....	176	18	..	1 1/4 miles.
Northwest peak of Wilmers Wharf cannery.....	187	53	..	3/8 mile.
Nail in blaze in cedar tree (8 inches diameter).....	198	52	00	4.77 meters.
Nail in blaze in cedar tree (8 inches diameter).....	318	06	20	4.30 meters.
Nail in blaze in cedar tree (9 inches diameter).....	345	21	00	13.11 meters.

Survey of Oyster Bars, Queen Annes County, Md.

BROAD.

General locality.—Northwestern side of upper Chester River on an island at entrance to Broad Creek about 1 mile northeast of entrance to Browns Creek. (See Progress map.)

Immediate locality.—Observed station is on western end of a marsh island about 9 yards north of shore, 43 yards south of shore, and 52 yards east-southeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Nils" (N 80° 24' E).....	0	00	00	1½ mile.
Near peak of cannery.....	7	17	..	1⅛ miles.
Chimney on ell of house on ridge.....	51	09	..	2¼ miles.
Right peak of barn.....	98	26	..	1 mile.
Peak of middle dormer window of large house.....	132	08	..	1½ miles.
East peak of large barn to left of large tree....	190	34	..	1 mile.
"Robertson Windmill".....	341	25	30	1½ miles.

NILS.

General locality.—Northwestern shore of upper Chester River about ¾ mile west of entrance to Southeast Creek and ½ mile east of an island at entrance to Broad Creek. (See Progress map.)

Immediate locality.—Observed station is in edge of cultivated field about 5 feet above high water, 4 yards north of shore, 110 yards east by south of tangent of point of curve of shore, and 450 yards southwest of a house and windmill.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Robertson" (N 59° 04' E).....	0	00	00	½ mile.
Weather vane on southwest peak of largest barn on ridge.....	10	46	..	1½ miles.
North peak of Wilmers Wharf cannery.....	37	03	..	½ mile.
Chimney of house near Wilmers Wharf.....	41	52	..	½ mile.
West chimney of large house on ridge.....	133	32	..	1 mile.
Near peak of roof of house on hill.....	158	22	..	1 mile.
"Robertson Windmill".....	336	55	..	½ mile.

WILMERS.

General locality.—Southeastern shore of upper Chester River on southwest side of entrance to Southeast Creek about 175 yards northeast of Wilmers Wharf. (See Progress map.)

Immediate locality.—Observed station is on a sanded grass point between river and marsh about 3 feet above high water, 7 yards east of shore, 5 yards southwest of shore, and 6 yards southeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Julius" (S 60° 34' W).....	0	00	00	1½ mile.
Chimney on near one of twin houses.....	4	58	..	2⅞ miles.
East peak of large barn.....	27	14	..	1½ miles.
"Robertson Windmill".....	74	09	30	⅝ mile.
Cupola on Robertson barn.....	83	23	..	¼ mile.
Flagpole on Rolphs Wharf.....	154	06	20	1¼ miles.
Weather vane on large barn.....	169	23	..	1½ miles.
Cupola on barn.....	212	59	..	300 yards.
Cupola on barn.....	284	57	..	⅝ mile.
Right peak of Wilmers Wharf cannery.....	348	26	..	175 yards.

ROBERTSON WINDMILL.

General locality.—Northwestern side of upper Chester River opposite entrance to Southeast Creek about $1\frac{1}{4}$ miles southeast of Rolphs Wharf. (See Progress map.)

Immediate locality.—Observed station is windmill on high tower in rear of house.

Marks.—Observed station is center point of windmill.

References.—None necessary.

ROBERTSON.

General locality.—Northwestern shore of upper Chester River near Riverside Wharf opposite entrance to Southeast Creek. (See Progress map.)

Immediate locality.—Observed station is about 2 feet above high water, 5 yards northwest of shore, 45 yards northeast of shore end of a wharf, and 100 yards southwest of a point of land.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	'	"	
"Thorsten" (N 52° 00' E).....	0	00	00	 $\frac{5}{8}$ mile.
Weather vane on large barn	9	30	..	 $1\frac{3}{4}$ miles.
Cupola on old barn.....	50	31	..	 $1\frac{1}{2}$ miles.
Chimney of house near Wilmers Wharf.....	97	11	..	 $\frac{3}{8}$ mile.
Pinnacle on cupola on barn.....	105	15	..	 $\frac{1}{2}$ mile.
Northwest peak of cannery.....	117	41	..	 $\frac{1}{4}$ mile.
Weather vane on cupola on barn.....	256	15	20	 $\frac{1}{4}$ mile.
Spindle on cupola on another barn.....	260	56	..	 $\frac{1}{4}$ mile.
Spindle on peak of Rolphs lower wharf house.	359	29	..	 $1\frac{1}{4}$ miles.

SOUTHEAST.

General locality.—Southeastern shore of upper Chester River on Deep Point at northeastern side of entrance to Southeast Creek about $\frac{3}{4}$ mile south-southwest of Rolphs Wharf and $\frac{1}{2}$ mile northeast of Wilmers Wharf. (See Progress map.)

Immediate locality.—Observed station is on cultivated land about 15 feet above high water, 19 yards south of edge of bank, 21 yards east by north of edge of bank, and 27 yards east by south of extreme point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	'	"	
"Wilmers" (S 57° 46' W).....	0	00	00	 $\frac{1}{4}$ mile.
Right tangent of Wilmers Wharf.....	2	57	..	 $\frac{1}{4}$ mile.
"Robertson Windmill".....	34	41	20	 $\frac{3}{4}$ mile.
Spindle on cupola on barn.....	38	02	..	 $\frac{3}{4}$ mile.
Weather vane on cupola on barn	38	32	..	 $\frac{3}{4}$ mile.
Near peak of long small shanty.....	118	31	..	 2 miles.
Left peak of large barn.....	134	39	..	 $1\frac{1}{4}$ miles.
Flagstaff on Rolphs Wharf house.....	140	54	10	 $\frac{7}{8}$ mile.
Right peak of long barn.....	191	46	..	 $\frac{3}{4}$ mile.
Lightning rod between two chimneys on house.....	248	51	..	 $\frac{7}{8}$ mile.
Right peak of Wilmers Wharf cannery.....	358	34	..	 $\frac{5}{8}$ mile.

THORSTEN.

General locality.—Northwestern shore of upper Chester River about $\frac{3}{4}$ mile northeast of Wilmers Wharf and $\frac{1}{2}$ mile north of entrance to Southeast Creek. (See Progress map.)

Immediate locality.—Observed station is about 3 feet above high water, 12 yards northwest of shore, 10 yards northeast of short fence, and 4 yards southeast of lone cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Blank" (N 19° 37' E).....	0	00	00	 $\frac{3}{8}$ mile.
Northwest peak of large barn.....	4	34	..	 $1\frac{1}{4}$ miles.
Northwest peak of large barn.....	21	09	..	 1 mile.
Flagstaff on Rolphs Wharf.....	23	33	..	 $\frac{3}{8}$ mile.
Weather vane on very large barn.....	48	01	..	 $1\frac{1}{4}$ miles.
West peak of barn behind wharf.....	81	03	..	 1 mile.
Lightning rod to right of two chimneys of house.....	111	15	..	 $1\frac{3}{4}$ miles.
Nail in blaze in fence post.....	115	15	30	 8.85 meters.
Top point of roof of large brick house on ridge.....	135	05	40	 $2\frac{1}{4}$ miles.
Spindle on cupola on left one of two barns at Wilmers Wharf.....	177	08	40	 $\frac{3}{4}$ mile.
Northwest peak of Wilmers Wharf cannery.....	190	15	..	 $\frac{3}{4}$ mile.
Nail in blaze in cedar tree (10 inches diameter).....	279	43	30	 3.40 meters.

BLANK.

General locality.—Northwestern shore of upper Chester River about $\frac{1}{4}$ mile west of Rolphs Wharf and $\frac{3}{4}$ mile north of entrance to Southeast Creek. (See Progress map.)

Immediate locality.—Observed station is on a grassy point about 2 feet above high water, 7 yards west of shore, 9 yards north of shore, 8 yards northwest of extreme end of point, and 40 yards from a dense clump of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Rolphs" (N 82° 37' E).....	0	00	00	 $\frac{1}{4}$ mile.
Weather vane on wharf house.....	10	19	..	 $\frac{1}{4}$ mile.
Left peak of wharf house.....	71	30	..	 $\frac{1}{2}$ mile.
Left peak of small house among trees.....	104	28	30	 $1\frac{3}{4}$ miles.
Spindle on barn cupola.....	115	06	..	 $1\frac{3}{4}$ miles.
Peak of middle dormer window of house.....	271	38	..	 $1\frac{1}{4}$ miles.
Peak of large barn.....	333	25	..	 $\frac{3}{8}$ mile.
Flagstaff on Rolphs Wharf house.....	356	27	..	 $\frac{1}{4}$ mile.

ROLPHS.

General locality.—Eastern shore of upper Chester River about 100 yards southeast of Rolphs Wharf and $\frac{3}{4}$ mile north of entrance to Southeast Creek. (See Progress map.)

Immediate locality.—Observed station is on a grass bank between two large willow trees about 6 feet above high water, 5 yards northeast of shore, 19 yards south-southwest of side gate to yard, and 7 yards southwest of a road 3 feet higher than observed station.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Southeast" (S 22° 53' W).....	0	00	00	 ¾ mile.
Peak of Wilmers Wharf cannery.....	15	06	..	 1¼ miles.
Flagstaff on Rolphs Wharf.....	76	59	..	 100 yards.
Nail in blaze in willow tree (24 inches diam- eter).....	88	06	20	 7.16 meters.
Chimney on ell of Story house.....	151	36	..	 53 yards.
Nail in blaze in willow tree (27 inches diam- eter).....	220	31	10	 13.96 meters.
Chimney on ell of Story house.....	261	56	..	 120 yards.
Nail in blaze in willow tree (25 inches diam- eter).....	309	26	40	 8.51 meters.
Weather vane on middle of lower wharf house.	347	42	..	 100 yards.

CRANEY.

General locality.—Eastern shore of Chesapeake Bay on western shore of Kent Island about ½ mile north of Craney Creek and 4½ miles east of Tolly Point. (See Chart No. 31.)

Immediate locality.—Observed station is about 3 feet above and 30 feet back from high water on a low, sandy, cultivated field. A group of farm buildings stand about ¼ mile away. Cement monument marking reference station is 4.88 meters N 85° 36' E of observed station.

Marks.—Observed station is a nail in a wooden stub projecting 3 inches above surface of ground. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Thomas Point Light" (S 56° 45' W).....	0	00	00	 4¾ miles.
"Greenbury Point Shoal Light".....	57	27	30	 5¼ miles.
"Sandy Point Light".....	111	26	30	 5¾ miles.
REFERENCE STATION.....	208	51	10	 4.88 meters.
Cupola on barn.....	258	11	..	 ¼ mile.
Extreme south tangent of Kent Island.....	310	52	..	 6 miles.

THOMAS POINT SHOAL LIGHT.

General locality.—Western side of Chesapeake Bay offshore about 1¼ miles southeast of Thomas Point and 3 miles south of entrance to channel to Annapolis. (See Chart No. 31.)

Immediate locality.—Observed station is on a hexagonal screw-pile structure known as Thomas Point Shoal Lighthouse.

Marks.—Observed station is center point of lantern on Thomas Point Shoal Lighthouse.

<i>Reference.</i> —	°	'	"	
"Thomas 3" (N 56° 07' W).....	0	00	00	 1¼ miles.

BLOODY POINT BAR LIGHT.

General locality.—Offshore of southwestern end of Kent Island on northern side of entrance to Eastern Bay about 1½ miles southwest of Bloody Point and 1¼ miles west of Kent Point. (See Chart No. 31.)

Immediate locality.—Observed station is on tower on caisson structure known as Bloody Point Bar Lighthouse.

Marks.—Observed station is center point of lantern on Bloody Point Bar Lighthouse.

<i>Reference.</i> —	°	'	"	
"Valliant" (S 4° 59' E).....	0	00	00	 4½ miles.

TENK.

General locality.—Northern side of entrance to Eastern Bay on Kent Point about $1\frac{1}{2}$ miles east of Bloody Point Bar Light. (See Chart No. 31.)

Immediate locality.—Observed station is in about 2 feet of water, 18 yards off shore of Kent Point, 50 yards southwest of point of land, and 65 yards south-southeast of another point of land. Cement monument marking reference station is 35.94 meters N $36^{\circ} 15'$ W of observed station.

Marks.—Observed station is nail in center of 3-inch square stub in water with top about on level with high water. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Bloody Point Bar Light" (S $86^{\circ} 34'$ W)....	0	00	00	$1\frac{1}{4}$ miles.
REFERENCE STATION.....	57	11	30	35.94 meters.
Chimney of house on Tilghmans Point Farm..	169	26	..	$5\frac{1}{2}$ miles.
"Rich Neck Water Tank".....	175	48	10	$5\frac{1}{4}$ miles.
Flagpole on Claiborne train shed.....	181	14	..	$4\frac{1}{2}$ miles.
Right chimney of house.....	188	34	..	$4\frac{1}{2}$ miles.
"Kemp Tower".....	190	21	30	$3\frac{1}{2}$ miles.
Right chimney of brick house.....	206	17	..	$3\frac{3}{4}$ miles.
Right chimney of house.....	240	12	..	$4\frac{1}{2}$ miles.
Chimney left of house among trees on Poplar Island.....	278	26	..	$3\frac{3}{4}$ miles.

STRAIGHT.

General locality.—Northern shore of Eastern Bay on Long Point about $2\frac{1}{4}$ miles northeast of Kent Point, $2\frac{1}{2}$ miles northwest of Wades Point, and $\frac{1}{8}$ mile northeast of entrance to Long Point Creek. (See Chart No. 31.)

Immediate locality.—Observed station is in a cultivated field about 8 feet above high water, 35 yards west of edge of bank, 45 yards northwest of edge of bank near a tree, 80 yards south-southwest of fence corner, 245 yards south-southeast of fence corner at gate, and 175 yards east-southeast of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Needle" (N $48^{\circ} 15'$ E).....	0	00	00	$4\frac{1}{2}$ miles.
Left tangent of Tilghmans Point.....	35	07	..	$4\frac{1}{2}$ miles.
Chimney of house on Tilghmans Point Farm..	42	27	..	$4\frac{1}{2}$ miles.
"Kemp Tower".....	83	46	00	$2\frac{1}{2}$ miles.
Nail in blaze in red oak tree (22 inches diameter).....	113	59	00	31.06 meters.
Right tangent of woods on Poplar Island.....	155	30	..	$5\frac{3}{4}$ miles.
Left tangent of woods on Kent Point.....	179	48	..	2 miles.
South peak of building.....	264	18	..	$\frac{1}{2}$ mile.
East peak of barn.....	317	48	..	$\frac{3}{4}$ mile.
South chimney of house.....	339	10	..	$\frac{1}{4}$ mile.

MOUTH.

General locality.—Northern shore of Eastern Bay on eastern shore of Kent Island about $1\frac{1}{4}$ miles north of Long Point, $3\frac{1}{2}$ miles northwest of Claiborne Wharf, and $3\frac{1}{4}$ miles southwest of Bodkin Island. (See Chart No. 31.)

Immediate locality.—Observed station is in a cultivated field about 8 feet above high water, 10 yards west of top of a bank with uniform slope to shore, 50 yards south of a small cove, and 20 yards south of a group of cedar trees near shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Matta" (N 5° 49' W).....	0	00	00	2¼ miles.
South gable of barn.....	26	41		4¼ miles.
West gable of house.....	33	35		2¼ miles.
Right tangent of woods on Turkey Point.....	50	25		3 miles.
"Parsons Island Water Tank".....	66	43	00	5½ miles.
North gable of barn.....	74	49		6¼ miles.
Left tangent of woods on Tilghmans Point.....	103	05		4¼ miles.
South chimney of house on Tilghmans Point				
Farm.....	112	19		4 miles.
"Rich Neck Water Tank".....	124	48	40	3¾ miles.
South gable of Claiborne Wharf house.....	137	41		3½ miles.
"Kemp Tower".....	154	09	00	3½ miles.
East chimney of Legg house.....	224	59		¾ mile.
Chimney of small house.....	286	35		1½ miles.
South gable of barn.....	342	46		1¾ miles.

MATTA.

General locality.—Northern shore of Eastern Bay on eastern shore of Kent Island at western side of entrance to Shipping Creek about 2 miles west of Turkey Point. (See Chart No. 31.)

Immediate locality.—Observed station is in cultivated field about 15 feet above high water, 125 yards southwest of extreme end of point, 25 yards northwest of dry ditch, and 200 yards northwest of lone cedar tree near shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Batts" (N 67° 45' E).....	0	00	00	1 mile.
North chimney of house.....	17	54		2 miles.
Left tangent of woods on Tilghmans Point...	54	30		5¾ miles.
North chimney of house on Tilghmans Point				
Farm.....	62	34		5¾ miles.
"Rich Neck Water Tank".....	71	31	00	5½ miles.
Left tangent of woods on Long Point.....	105	49		2¼ miles.
Chimney of Greeve house.....	124	53		¼ mile.
South chimney of house.....	231	14		¾ mile.
South cupola on barn.....	247	39		¾ mile.
East chimney of house.....	273	58		1½ miles.
Chimney of small house.....	296	12		1¼ miles.
West chimney of house.....	305	45		1½ miles.

THEN.

General locality.—Western shore of small bay at entrance to Shipping Creek about ¾ mile northwest of Eastern Bay, ¾ mile northeast of entrance to narrow part of Shipping Creek, and at western side of entrance to a smaller creek. (See Chart No. 31.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 33 yards west of shore, 40 yards south of shore, 50 yards north of shore at line between hard land and marsh, 8 yards east of pasture land, and ¼ mile east of 2½-story house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Some" (N 68° 51' E).....	0	00	00	1½ mile.
Near peak of brick house.....	16	50	..	⅝ mile.
Large lone tree on point.....	46	08	30	¾ mile.
"Rich Neck Water Tank".....	74	53	30	6 miles.
Weather vane on barn cupola.....	110	34	30	3 miles.
Right corner of large house.....	115	32	..	1 mile.
Large lone tree in field.....	178	12	..	250 yards.
Near peak of house.....	200	43	..	¼ mile.
Near peak of house.....	247	04	..	⅜ mile.
Left peak of house.....	300	50	..	½ mile.
Left peak of large house.....	323	36	..	½ mile.

SOME.

General locality.—Northern shore of small bay at entrance to Shipping Creek on a point between two small creeks about ¾ mile north of Eastern Bay and 2 miles northwest of Turkey Point. (See Chart No. 31.)

Immediate locality.—Observed station is in a cultivated field about 5 feet above high water, 20 yards northeast of marsh, 30 yards northwest of edge of bank, 28 yards east of edge of bank, 50 yards northeast of shore of Shipping Creek, and 53 yards southwest of shore of small creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Batts" (S 49° 01' E).....	0	00	00	¾ mile.
Large lone tree.....	18	55	..	½ mile.
Peak between two chimneys of large house..	72	18	..	1½ miles.
Right peak of barn.....	105	01	..	1½ miles.
Near peak of house.....	125	20	..	¾ mile.
Near peak of large barn.....	171	45	..	⅜ mile.
Left chimney of old house.....	194	07	..	¼ mile.
Spindle on cupola on barn.....	221	37	..	½ mile.
Large pine tree.....	307	21	..	⅜ mile.
Left corner of large house.....	339	25	..	¾ mile.

BATTS.

General locality.—Northern shore of Eastern Bay on southern end of Batts Neck between Shipping and Cox Creeks about 1¼ miles northwest of Turkey Point. (See Chart No. 31.)

Immediate locality.—Observed station is in cultivated field about 2 feet above high water, 21 yards north of shore, and 100 yards west of a wire fence extending 100 yards into bay.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument. Station "COXES CREEK," 1899, is 87.70 meters N 72° 20' E of observed station and is marked by the center of a cross in the top of a granite post about 12 inches square in the rough and about 27 inches long projecting 5 inches above surface of ground. The top of the granite post is dressed to a 6-inch cube marked with a square cross and the letters "U. S." Subsurface mark is center of neck of a bottle buried with top 3 inches below base of granite post.

References.—

	°	'	"	
"Turkey" (S 58° 24' E).....	0	00	00	1¼ miles.
North chimney of house on Tilghmans Point Farm.....	19	25	..	5 miles.
"Rich Neck Water Tank".....	28	26	00	5¼ miles.
Nail in blaze in one of twin persimmon trees (4 inches diameter).....	37	36	40	3.94 meters.
Left tangent of woods on Long Point.....	69	48	..	¾ miles.

References—Continued.

	°	'	"	
East gable of house.....	76	30	..	2½ miles.
Nail in blaze in persimmon tree (6 inches diameter).....	91	13	50	9.76 meters.
South chimney of house.....	202	08	..	¾ mile.
South chimney of house.....	242	32	..	¾ mile.
South gable of barn.....	271	54	..	1½ miles.
North chimney of house.....	293	22	..	1¾ miles.
"Coxes Creek" 1899 (granite post).....	310	44	20	87.70 meters.
North chimney of house.....	341	07	..	1¾ miles.

TOP.

General locality.—Western shore of Cox Creek about 1 mile north of Eastern Bay and 1 mile south of Warehouse Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on cupola of a barn about 150 yards east of shore.

Marks.—Observed station is center point of top of cupola on barn.

References.—None necessary.

WARE.

General locality.—Western shore of Cox Creek about 2 miles north of Eastern Bay and ¼ mile south of entrance to Warehouse Creek. (See Chart No. 31.)

Immediate locality.—Observed station is in a cultivated field about 15 feet above high water, 300 yards northwest of end of point, and 90 yards south of wire fence extending east and west.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tuxon" (N 13° 45' E).....	0	00	00	¾ mile.
South gable of house.....	1	11	..	1½ miles.
South chimney of house.....	19	05	..	1¼ miles.
North chimney of house.....	34	50	..	1 mile.
Cupola on barn.....	99	46	..	¾ mile.
North chimney of house.....	171	48	..	1¼ miles.
South chimney of house.....	257	55	..	350 yards.
South chimney of house.....	307	54	..	½ mile.

COFFEE.

General locality.—Southwestern shore of Warehouse Creek on a point about ½ mile northwest of Cox Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 9 yards south of point of shore, 13 yards southwest of shore, 17 yards west-northwest of shore at fence, 12 yards north of fence, 29 yards east-northeast of corner of fence, and 250 yards north by east of house with two chimneys.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Here" (N 53° 46' W).....	0	00	00	¾ mile.
Left peak of barn.....	22	49	..	1¼ miles.
Left chimney of brick house.....	51	40	..	1¼ miles.
West chimney of house.....	100	41	..	1¼ miles.
Near peak of house.....	113	46	..	1¼ miles.
Left peak of house.....	136	11	..	1½ miles.
Cupola on barn.....	160	33	..	1½ miles.
Nail in blaze in fence post.....	173	15	30	16.57 meters.
Nail in blaze in fence post.....	220	34	40	12.29 meters.
Near corner of house.....	226	02	..	250 yards.
Nail in blaze in fence post.....	245	59	30	14.14 meters.

HERE.

General locality.—Southwestern shore of Warehouse Creek on a point at northwestern side of entrance to a small cove about $\frac{3}{4}$ mile northwest of Cox Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 17 yards west of shore, 20 yards southwest of shore, 25 yards northwest of shore, 60 yards north of shore, 3 yards southeast of one-strand barbed-wire fence, and $\frac{1}{4}$ mile east to southeast of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Samuel" (N $31^{\circ} 22'$ E).....	0	00	00	$\frac{1}{4}$ mile.
Chimney outside northwest end of large house	29	34	..	$1\frac{1}{8}$ miles.
Near peak of house.....	43	01	..	$1\frac{3}{8}$ miles.
Cupola on barn.....	79	17	..	$1\frac{3}{4}$ miles.
Cupola on barn.....	96	45	..	$1\frac{3}{4}$ miles.
Middle north chimney of large old brick house	115	39	..	$\frac{3}{4}$ mile.
Peak of side gable of house.....	185	54	..	$1\frac{1}{2}$ miles.
Left end of large house.....	314	40	..	$\frac{3}{4}$ mile.

SAMUEL.

General locality.—Northeastern shore of Warehouse Creek on a point at northwestern side of entrance to a small cove about $\frac{3}{4}$ mile northwest of Cox Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on long marsh point about 1 foot above high water, 9 yards east of shore of Warehouse Creek, 23 yards west-southwest of shore of small cove, 18 yards north of point, and 27 yards west of another point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Liver" (S $56^{\circ} 31'$ E).....	0	00	00	$\frac{3}{8}$ mile.
Spindle on barn cupola.....	12	19	..	$1\frac{3}{4}$ miles.
Near peak of small house.....	34	56	..	$\frac{3}{8}$ mile.
Left chimney of large house.....	92	52	..	$1\frac{1}{2}$ miles.
Chimney of house showing through trees...	208	43	..	$\frac{3}{4}$ mile.
Left corner of large brick house.....	247	45	..	$1\frac{1}{4}$ miles.
Chimney outside of near end of house.....	304	12	..	$1\frac{1}{4}$ miles.
Left peak of house.....	339	08	..	$1\frac{1}{4}$ miles.
Cupola on barn.....	353	59	10	$1\frac{1}{2}$ miles.

LIVER.

General locality.—Northeastern shore of Warehouse Creek on a point at western side of entrance to a small cove about $\frac{1}{4}$ mile northwest of Cox Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 15 yards northwest of shore, 17 yards southeast of shore, 30 yards north of point of shore, 30 yards northeast of extreme end of point, and 250 yards southwest by south of three large trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tuxon" (N $83^{\circ} 37'$ E).....	0	00	00	$\frac{3}{8}$ mile.
Left peak of house.....	10	23	..	1 mile.
Cupola on barn.....	32	16	..	$1\frac{1}{4}$ miles.
Left tangent of left chimney of large house...	94	18	..	$1\frac{3}{4}$ miles.
Right peak of small house.....	118	20	..	$\frac{3}{8}$ mile.
Left peak of house with three dormer windows.....	237	10	..	1 mile.
Left peak of very large barn.....	281	55	..	$1\frac{3}{8}$ miles.
Clump of pine trees.....	299	34	..	250 yards.
West chimney of house.....	326	31	..	$1\frac{1}{2}$ miles.

TUXON.

General locality.—Western shore of Cox Creek on a point about 3 miles north of Eastern Bay, $\frac{1}{2}$ mile south of entrance to Thompsons Creek, and $\frac{1}{4}$ mile northeast of entrance to Warehouse Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on marsh about 2 feet above high water and 50 yards west of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 8 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Greek" (S 51° 51' E).....	0	00	00	 $\frac{1}{2}$ mile.
East chimney of house.....	41	10	..	 $\frac{3}{8}$ mile.
"Top" (cupola on barn).....	61	37	..	 $1\frac{3}{8}$ miles.
North chimney of house.....	77	45	..	 $\frac{3}{4}$ mile.
North chimney of house.....	107	28	..	 $\frac{5}{8}$ mile.
South gable of barn.....	198	06	..	 1 mile.
North chimney of house.....	265	55	..	 $\frac{3}{4}$ mile.
North chimney of house.....	288	06	..	 $\frac{5}{8}$ mile.
North chimney of house.....	333	02	..	 $\frac{1}{2}$ mile.
Cupola on barn.....	357	44	..	 $1\frac{1}{8}$ miles.

STEVE.

General locality.—Western shore of Cox Creek on a point about $3\frac{1}{4}$ miles north of Eastern Bay at southwestern side of entrance to Thompsons Creek and $\frac{1}{2}$ mile north of entrance to Warehouse Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 27 yards south of shore, 35 yards north of shore, 20 yards west of a point of shore, and 35 yards east of a point of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Thompson" (N 37° 13' W).....	0	00	00	 $\frac{3}{8}$ mile.
Chimney of small house.....	1	03	..	 $\frac{3}{4}$ mile.
Right peak of very large house.....	30	08	..	 1 mile.
Near corner of large house.....	65	50	..	 $\frac{3}{4}$ mile.
Near corner of large house.....	92	28	..	 $\frac{5}{8}$ mile.
Near peak of house.....	124	07	..	 $\frac{1}{2}$ mile.
Near peak of house.....	164	38	..	 $\frac{3}{4}$ mile.
Weather vane on house with two chimneys..	209	03	..	 $1\frac{1}{4}$ miles.
Left chimney of small house.....	234	45	..	 $1\frac{1}{8}$ miles.
Right peak of small house.....	253	12	..	 $1\frac{1}{4}$ miles.
Near peak of house.....	329	44	..	 1 mile.
Left corner of brick house.....	355	18	..	 $\frac{3}{4}$ mile.

THOMPSON.

General locality.—Western shore of Thompsons Creek about $\frac{3}{8}$ mile west of point of land between Thompsons Creek and Cox Creek and $\frac{1}{8}$ mile northwest of a small cove. (See Chart No. 31.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 30 yards south of shore, 45 yards northwest of shore, 20 yards southwest of point of shore, and 120 yards south-southeast of rail fence.

Survey of Oyster Bars, Queen Annes County, Md.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hope" (N 11° 27' E).....	0	00	00	 3½ mile.
Near peak of large house showing through trees.....	5	32	..	 1 mile.
Near corner of large house.....	50	56	..	 ¼ mile.
Near peak of large house.....	72	51	..	 ¾ mile.
Right peak of house.....	95	29	..	 ¾ mile.
Left corner of house.....	120	38	..	 1 mile.
Right chimney of house.....	186	03	..	 1 mile.
Left corner of brick house.....	303	33	..	 ½ mile.
Near peak of house.....	330	41	..	 1½ miles.
Right corner of very large house.....	353	36	..	 ¾ mile.

HOPE.

General locality.—Western shore of Thompsons Creek on a point between Thompsons Creek and a smaller creek about ½ mile northwest of Cox Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on marsh land about 1 foot above high water, 40 yards west of shore, 90 yards northwest of shore, and 200 yards east-southeast of end of fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Knock" (S 74° 42' E).....	0	00	00	: ½ mile.
Right corner of near chimney of house.....	4	07	..	 ¾ mile.
Right corner of near chimney of house.....	13	34	..	 ¾ mile.
Near peak of house.....	42	13	..	 1½ miles.
Weather vane on house with two chimneys..	65	46	30	 1½ miles.
Right tangent of near chimney of large house.	150	10	..	 ¾ mile.
Near peak of large brick house.....	159	59	..	 ¾ mile.
Near peak of house.....	224	12	..	 ¾ mile.
Right peak of large house.....	253	12	..	 ¾ mile.

KNOCK.

General locality.—Eastern shore of Thompsons Creek about ½ mile north of Cox Creek and opposite a point of land between Thompsons Creek and a cove. (See Chart No. 31.)

Immediate locality.—Observed station is in southwest end of point of woods about 1 foot above high water, 6 yards east of shore, and 60 yards south-southwest of a point of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Landing" (S 3° 06' E).....	0	00	00	 ¼ mile.
"Top" (barn cupola).....	10	08	30	 2½ miles.
Near peak of large house.....	83	14	..	 1½ miles.
Near peak of large brick house.....	94	16	..	 ¾ mile.
Left peak of very large barn.....	151	32	..	 ½ mile.
Nail in blaze in pine tree (6 inches diameter).	184	10	00	 5.50 meters.
Nail in blaze in pine tree (8 inches diameter).	226	58	30	 23.81 meters.
Nail in blaze in oak tree (10 inches diameter).	276	49	00	 7.15 meters.
Right corner of near chimney of large house..	295	35	..	 ¾ mile.

LANDING.

General locality.—Eastern shore of Thompsons Creek about $\frac{1}{2}$ mile northwest of Cox Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 16 yards northwest of cut in shore, 20 yards north-northwest of point of shore, 14 yards east of point, 12 yards southeast of shore, 100 yards west of cultivated land, and 250 yards south of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Timber" (S 38° 33' E).....	0	00	00	 $\frac{3}{8}$ mile.
Left peak of barn.....	1	07	..	 1 mile.
Weather vane on middle of house with two chimneys.....	34	38	..	 $1\frac{5}{8}$ miles.
Right chimney of house.....	66	41	..	 $1\frac{1}{8}$ miles.
Left corner of large brick house.....	150	12	..	 $\frac{3}{8}$ mile.
Right peak of very large house.....	202	18	..	 $\frac{3}{4}$ mile.
Right corner of large house.....	275	49	..	 $\frac{3}{8}$ mile.
Large house.....	314	03	..	 $\frac{7}{8}$ mile.
Right peak of barn.....	347	53	..	 $1\frac{3}{4}$ miles.

TIMBER.

General locality.—Eastern shore of Cox Creek about $3\frac{1}{4}$ miles north of Eastern Bay, $\frac{3}{4}$ mile north-east of entrance to Warehouse Creek, and opposite entrance to Thompsons Creek. (See Chart No. 31.)

Immediate locality.—Observed station is in a pasture between large cherry tree at the edge of the water and four cedar trees at the edge of the bank about 5 feet above high water, 4 yards east of edge of bank, 17 yards east of point, 6 yards southeast of edge of bank, and 12 yards northeast of edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ville" (S 9° 32' E).....	0	00	00	 $\frac{1}{4}$ mile.
Nail in blaze in cherry tree (30 inches diameter).....	26	26	10	 13.45 meters.
Right peak of house.....	41	00	..	 $1\frac{1}{4}$ miles.
Nail in blaze in stump (8 inches diameter)...	42	45	10	 6.12 meters.
Right peak of house.....	58	50	..	 $1\frac{3}{8}$ miles.
Left corner of large brick house.....	133	49	..	 1 mile.
Nail in blaze in cedar tree (5 inches diameter).....	170	05	10	 6.80 meters.
Left corner of left chimney of house.....	213	56	..	 $\frac{3}{8}$ mile.
Left corner of house.....	278	56	..	 400 yards.
Right corner of building.....	342	41	..	 $\frac{1}{2}$ mile.

VILLE.

General locality.—Eastern shore of Cox Creek about 3 miles north of Eastern Bay, $\frac{5}{8}$ mile northeast of entrance to Warehouse Creek, and $\frac{1}{2}$ mile southeast of entrance to Thompsons Creek. (See Chart No. 31.)

Immediate locality.—Observed station is in a pasture about 5 feet above high water, 8 yards east of edge of bank, 33 yards south of tangent of cliff, 60 yards north of small ditch, and 115 yards north of wire fence.

Survey of Oyster Bars, Queen Annes County, Md.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Greek" (S 3° 57' E).....	0	00	00	3/8 mile.
Left corner of house.....	45	52	..	1 mile.
Right peak of house.....	69	24	..	1 mile.
Left peak of brick house.....	127	44	..	1 mile.
Left corner of large brick house.....	137	32	..	1 1/4 miles.
Right peak of very long barn.....	160	05	..	1 1/4 miles.
Left corner of house.....	172	52	..	1/4 mile.
Near peak of house.....	276	09	..	3/4 mile.
Left corner of house.....	314	12	..	3/4 mile.
Right corner of modern house.....	340	03	..	1 1/4 miles.

GREEK.

General locality.—Eastern shore of Cox Creek on a point about 2 3/4 miles north of Eastern Bay and 1/2 mile east of entrance to Warehouse Creek. (See Chart No. 31.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 60 yards southwest of extreme end of point, and 125 yards east of a small marsh island.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tuxon" (N 51° 50' W).....	0	00	00	1/2 mile.
East chimney of house.....	14	37	..	1 1/2 miles.
South gable of barn.....	26	19	..	2 1/4 miles.
East chimney of house.....	45	37	..	1 1/4 miles.
East chimney of house.....	64	14	..	5/8 mile.
North chimney of house.....	91	26	..	1/4 mile.
Chimney of house.....	139	57	..	1/4 mile.
Cupola on barn.....	176	08	..	3/4 mile.
Chimney of small house.....	252	04	..	5/8 mile.
South chimney of house.....	290	55	..	1 mile.
South chimney of house.....	318	32	..	7/8 mile.

TOM.

General locality.—Eastern shore of Cox Creek about 2 miles north of Eastern Bay and 1/2 mile south-east of entrance to Warehouse Creek. (See Chart No. 31.)

Immediate locality.—Observed station is in a cultivated field about 12 feet above high water, 300 yards east of shore, 135 yards north of a graveyard, 100 yards southwest of a house, and 40 yards south of driveway beyond wire fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ware" (N 67° 55' W).....	0	00	00	3/8 mile.
Southwest corner of east house on road.....	28	01	..	100 yards.
South gable of small barn.....	61	09	..	2 1/4 miles.
East chimney of house.....	70	29	..	1 3/4 miles.
Chimney of house.....	92	43	..	7/8 mile.
North chimney of house.....	176	20	..	3/8 mile.
North gable of barn.....	272	59	..	1 1/4 miles.
North chimney of house.....	281	59	..	3/4 mile.
Chimney of small house.....	336	15	..	3/4 mile.

DELL.

General locality.—Eastern shore of Cox Creek about $1\frac{1}{2}$ miles north of Eastern Bay and 1 mile south of entrance to Warehouse Creek. (See Chart No. 31.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 43 yards from shore, 28 yards northeast of top of bank, and 30 yards northeast of a lone cedar tree at edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Turkey" (S $17^{\circ} 22'$ E).....	0	00	00	 $1\frac{5}{8}$ miles.
"Rich Neck Water Tank".....	16	31	00	 $5\frac{3}{8}$ miles.
Left tangent of woods on Long Point.....	33	36	..	 $4\frac{1}{4}$ miles.
North chimney of house.....	44	07	..	 $3\frac{1}{4}$ miles.
Left tangent of house.....	72	56	..	 1 mile.
North chimney of house.....	88	09	..	 $\frac{1}{2}$ mile.
Chimney of small house.....	136	19	..	 $1\frac{1}{4}$ miles.
South chimney of house.....	154	52	..	 $1\frac{1}{4}$ miles.
West chimney of house.....	188	19	..	 $\frac{1}{2}$ mile.
Cupola on barn.....	230	45	..	 $\frac{1}{4}$ mile.
West gable of barn.....	303	02	..	 $\frac{1}{2}$ mile.
Left tangent of small fishing shack.....	343	03	..	 $\frac{3}{8}$ mile.
Right tangent of barn.....	354	31	..	 $1\frac{1}{4}$ miles.

TURKEY.

General locality.—Northern shore of Eastern Bay on southern end of Cox Neck on Turkey Point about 1 mile west of the north end of Bodkin Island. (See Chart No. 31.)

Immediate locality.—Observed station is in marsh meadow about 2 feet above high water, 40 yards northeast of shore, 200 yards south of a group of three pine trees near shore, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mouth" (S $40^{\circ} 32'$ W).....	0	00	00	 $2\frac{3}{4}$ miles.
Chimney of house.....	23	19	..	 $2\frac{3}{4}$ miles.
Chimney of Greeve house.....	49	14	..	 $2\frac{1}{2}$ miles.
South cupola on barn.....	68	20	..	 $2\frac{3}{4}$ miles.
North chimney of house.....	72	30	..	 $2\frac{1}{2}$ miles.
South chimney of house.....	103	39	..	 $1\frac{3}{4}$ miles.
South chimney of house.....	113	22	..	 $2\frac{1}{2}$ miles.
West pine tree of group.....	132	12	..	 200 yards.
Right tangent of Bodkin Island.....	254	46	..	 1 mile.
Left tangent of Tilghmans Point.....	275	23	..	 $3\frac{1}{2}$ miles.
North chimney of house on Tilghmans Point Farm.....	286	38	..	 $3\frac{3}{4}$ miles.
"Rich Neck Water Tank".....	297	25	..	 $4\frac{1}{4}$ miles.
Left tangent of woods on Long Point.....	352	26	..	 3 miles.

COX.

General locality.—Western shore of Crab Alley Bay on Cox Neck about $\frac{3}{8}$ mile north of Eastern Bay and 1 mile northwest of Bodkin Island. (See Chart No. 31.)

Immediate locality.—Observed station is at edge of a cultivated field on narrow neck of land about 3 feet above high water, 16 yards west of shore, 18 yards east of shore, and 80 yards northwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tull" (N 12° 34' E).....	0	00	00	1 $\frac{5}{8}$ miles.
Chimney of small house.....	12	54	..	2 $\frac{1}{2}$ miles.
Chimney of house.....	21	19	..	2 $\frac{1}{2}$ miles.
Cupola on barn.....	30	09	..	2 $\frac{3}{4}$ miles.
Right corner of old barn.....	49	27	..	2 $\frac{1}{8}$ miles.
East chimney of large brick house.....	54	32	..	2 $\frac{1}{8}$ miles.
Right tangent of Normans Point.....	61	40	..	2 miles.
North gable of barn on Parsons Island.....	79	50	..	2 $\frac{1}{2}$ miles.
Left tangent of Bodkin Island.....	123	47	..	$\frac{7}{8}$ mile.
East gable of barn.....	227	02	..	$\frac{3}{8}$ mile.
Chimney of house.....	232	44	..	3 miles.
Chimney of house.....	255	50	..	2 $\frac{1}{8}$ miles.

TULL.

General locality.—Eastern side of Kent Island and western side of Crab Alley Bay on northern end of Johnson Island at entrance to Crab Alley Creek about 2 $\frac{1}{4}$ miles north of Bodkin Island and 1 $\frac{1}{2}$ miles northwest of Normans Point. (See Chart No. 31.)

Immediate locality.—Observed station is in a marsh meadow about 2 feet above high water, 18 yards south of shore, 53 yards west of extreme northeast end of Johnson Island, and 40 yards north of a group of pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cox" (S 12° 35' W).....	0	00	00	1 $\frac{5}{8}$ miles.
Chimney of house.....	4	54	..	$\frac{1}{4}$ mile.
East gable of house.....	89	08	..	$\frac{3}{8}$ mile.
South chimney of house.....	121	14	..	$\frac{1}{4}$ mile.
Chimney on small tenant house.....	145	12	..	$\frac{3}{4}$ mile.
Cupola on barn.....	147	30	..	1 mile.
Right tangent of fishing shack.....	203	27	..	$\frac{1}{2}$ mile.
Cupola on barn.....	258	23	..	1 $\frac{1}{4}$ miles.
Left tangent to small island.....	329	35	..	$\frac{3}{8}$ mile.
Left tangent to pine woods on Turkey Point.	355	24	..	2 miles.

NEEDLE.

General locality.—Northern part of Eastern Bay on Bodkin Island at entrance to Crab Alley Bay about 1 $\frac{1}{2}$ miles west of the south end of Parsons Island and 1 mile east-southeast of Turkey Point. (See Chart No. 31.)

Immediate locality.—Observed station is near south end of Bodkin Island about 12 feet above high water, 50 yards north by west of shore, 90 yards northeast by east of shore, 115 yards west-southwest of shore, and in center of radial lines of sight cut in bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Straight" (S 48° 17' W).....	0	00	00	 4½ miles.
Nail in blaze in pine tree (6 inches diameter).....	5	51	30	 22.78 meters.
Nail in blaze in pine tree (8 inches diameter).....	27	56	10	 17.17 meters.
Right chimney of large house.....	64	29	..	 3½ miles.
Nail in blaze in pine tree (6 inches diameter).....	82	06	50	 11.54 meters.
Chimney of house on Parsons Island.....	194	43	..	 2½ miles.
Near chimney of Starr, large brick house.....	262	54	..	 6½ miles.
Cupola on left barn of Tilghmans Point Farm.....	289	40	..	 3 miles.
Chimney of bungalow.....	324	57	..	 5½ miles.
Nail in blaze in pine tree (7 inches diameter).....	345	25	00	 18.20 meters.

KEMP TOWER.

General locality.—Southern shore of Eastern Bay on Wades Point about 1 mile southwest of Claiborne Wharf and 5½ miles east of Bloody Point Bar Light. (See Chart No. 31.)

Immediate locality.—Observed station is on tower or cupola of Wades Point Hotel, which is a large square frame structure adjoining a brick house.

Marks.—Observed station is center of top of roof of cupola.

References.—None necessary.

KEMP.

General locality.—Southern shore of Eastern Bay on Wades Point about 1½ miles southwest of Claiborne Wharf and 4¾ miles east by south of Bloody Point Bar Light. (See Chart No. 31.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 30 yards east by north of a wire fence and several trees, 55 yards south-southeast of edge of bank, 90 yards east-northeast of a bungalow, 130 yards north by west of a wire and wood fence corner, 130 yards north-northwest of wooden fence, and 400 yards west by south of Wades Point Hotel.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bloody Point Bar Light" (N 83° 37' W)...	0	00	00	 4¾ miles.
Nail in blaze in locust tree (14 inches diameter).....	1	41	30	 35.07 meters.
Left tangent of Kent Point.....	3	11	..	 3¾ miles.
Chimney on middle of house.....	17	12	..	 3¾ miles.
Left peak of barn.....	25	21	..	 4¼ miles.
Chimney of house.....	31	04	..	 3½ miles.
Left chimney of house.....	45	27	..	 3 miles.
Peak of main part of house.....	63	15	..	 5½ miles.
Left tangent of Tilghmans Point.....	128	06	..	 3½ miles.
"Dixon" (center of house).....	130	07	50	 2¾ miles.
"Kemp Tower".....	130	06	40	 ¼ mile.
Fence corner (wood and wire).....	244	43	..	 132 yards.
Near corner of cook house.....	288	40	..	 110 yards.
Nail in blaze in locust tree (7 inches diameter).....	300	20	20	 27.23 meters.
Right corner post of piazza.....	306	24	..	 90 yards.
Nail in blaze in cedar tree (6 inches diameter).....	310	43	30	 26.97 meters.

RICH NECK WATER TANK.

General locality.—On neck of land about halfway between Eastern Bay and Miles River, about $1\frac{3}{4}$ miles south-southwest of Tilghmans Point. (See Charts Nos. 31 and 32.)

Immediate locality.—Observed station is on large water tank on steel tower on Rich Neck Farm.

Marks.—Observed station is spindle on center of water tank.

References.—None necessary.

OVER.

General locality.—Eastern shore of Crab Alley Bay on a point about $1\frac{1}{4}$ miles north-northwest of Normans Point. (See Chart No. 32.)

Immediate locality.—Observed station is on edge of a cultivated field near a number of locust and wild cherry trees, about 3 feet above high water, 11 yards northeast of shore, 50 yards southeast of end of a marsh point, and 4 yards north of corner of a rail fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	//	
"Norman" (S $21^{\circ} 28'$ E).....	0	00	00	 $1\frac{1}{8}$ miles.
Left tangent of woods on Tilghmans Point...	10	37	..	 $5\frac{3}{8}$ miles.
Right tangent of Bodkin Island.....	38	42	..	 $2\frac{1}{2}$ miles.
Left tangent of pine woods on Turkey Point..	51	46	..	 $2\frac{1}{2}$ miles.
Chimney of house.....	99	13	..	 $1\frac{1}{8}$ miles.
Chimney of small house.....	108	29	..	 1 mile.
Chimney of house.....	121	14	..	 $1\frac{1}{4}$ miles.
Chimney of house.....	176	19	..	 $\frac{5}{8}$ mile.
Nail in blaze in wild cherry tree (8 inches diameter).....	181	52	40	 8.98 meters.
South gable of house.....	193	00	..	 $\frac{1}{2}$ mile.
Nail in blaze in locust tree (8 inches diameter).....	276	55	40	 7.13 meters.
West chimney of house.....	299	11	..	 200 yards.

NORMAN.

General locality.—Eastern shore of Crab Alley Bay on southwestern extremity of Crab Alley Neck about $\frac{1}{4}$ mile west of Normans Point, 2 miles northeast of Turkey Point, and $\frac{7}{8}$ mile northwest of Parsons Island. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field on a rapidly washing, narrow neck of land, about 6 feet above high water, 20 yards north of vertical bank at shore, 30 yards south of vertical bank at shore, and 40 yards northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	//	
"Parsons" (S $38^{\circ} 40'$ E).....	00	00	00	 $1\frac{1}{8}$ miles.
Right tangent of Parsons Island.....	16	46	..	 $1\frac{1}{4}$ miles.
Left tangent of woods on Tilghmans Point...	30	30	..	 4 miles.
Left tangent of woods on Bodkin Island....	68	28	..	 2 miles.
Right tangent of Bodkin Island.....	78	39	..	 2 miles.
Right tangent of woods on Turkey Point....	93	17	..	 2 miles.
Nail in blaze of hackberry tree (6 inches diameter).....	112	42	30	 22.49 meters.

References—Continued.

	°	'	"	
Chimney of small house.....	154	22	..	1¾ miles.
East chimney of house.....	167	41	..	2¼ miles.
South gable of house.....	205	38	..	1 mile.
West chimney of large brick house.....	271	53	..	¼ mile.
Chimney of small house.....	292	22	..	3 miles.
"Parsons Island Water Tank".....	353	41	40	1 mile.

PARSONS.

General locality.—In northern side of Eastern Bay on western side of Parsons Island about 3 miles north of Tilghmans Point. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land on highest part of island about 75 feet above high water, 110 yards southeast of shore, 270 yards south-southwest of Parsons Island Water Tank, 350 yards southwest of a house, 380 yards west-southwest of a large barn, 145 yards northeast of a wire fence, 155 yards northwest of wire fence at farm road, 195 yards southeast of a fence, and on the range of the west edge of the south chimney on the lower gable of the house with the west side of a window in the center of the south side of the house. Cement monument marking reference station is 26.10 meters N 21° 43' E of observed station.

Marks.—Observed station is center of cross cut on rough granite stone about 35 inches long and 12 inches square with top cut to 6-inch cube and marked "U S" in lower half of cross. Subsurface mark is the mouth of a bottle 3 inches below base of monument. Reference station is center point of triangle on standard cement monument with top 5 inches above the surface of the ground.

References.—

"Alley" (N 2° 12' W).....	0	00	00	1¼ miles.
REFERENCE STATION.....	23	55	30	26.10 meters.
"Parsons Island Water Tank".....	24	04	20	268 yards.
Near peak of house.....	35	13	..	400 yards.
Right corner of barn.....	61	27	..	382 yards.
Walnut tree.....	148	17	..	300 yards.
Cupola of left barn of Tilghmans Point Farm.....	192	07	..	3½ miles.
Right tangent of Claiborne train shed.....	202	57	..	5 miles.
Right end of woods on Poplar Island.....	220	27	..	12 miles.
Left tangent of Kent Point.....	234	23	..	8¼ miles.
Left chimney of house.....	297	57	..	3 miles.
Side peak of 2½-story house.....	314	35	..	3½ miles.
Middle chimney of large brick house.....	336	44	..	1¼ miles.
"New Barn Cupola".....	349	10	00	2¼ miles.

PARSONS ISLAND WATER TANK.

General locality.—Northern part of Eastern Bay between Crab Alley and Prospect Bays on Parsons Island, about halfway between the north and south end of the island. (See Chart No. 32.)

Immediate locality.—Observed station is on a water tank on wooden structure near a house.

Marks.—Observed station is center of spindle on center of water tank.

References.—None necessary.

ALLEY.

General locality.—Western shore of Prospect Bay on Crab Alley Neck about ¾ mile north of Parsons Island and ⅜ mile north of Narrows Point. (See Chart No. 32.)

Immediate locality.—Observed station is on hard ground in a marsh at northeast end of clump of 12 persimmon trees about 1 foot above high water and 75 yards southwest of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Dull" (N 2° 35' W).....	0	00	00	 ¾ mile.
Near peak of "Fishermans Inn".....	6	48	..	 3 miles.
Nail in blaze in persimmon tree (4 inches diameter).....	30	41	20	 3.99 meters.
Left chimney of old house with two dormer windows.....	48	29	..	 2¾ miles.
Left peak of barn.....	79	42	..	 2¾ miles.
Left chimney of large house.....	113	34	..	 2¾ miles.
"Parsons Island Water Tank".....	177	35	30	 1¾ miles.
Nail in blaze in persimmon tree (3 inches diameter).....	194	56	00	 4.88 meters.
Nail in blaze in persimmon tree (2½ inches diameter).....	238	25	00	 3.70 meters.
East chimney of brick house.....	246	02	..	 ½ mile.
Nail in blaze in persimmon tree (3 inches diameter).....	298	21	30	 3.29 meters.
Chimney of house among trees.....	317	54	..	 1¾ miles.
"New Barn Cupola".....	335	41	40	 1 mile.

NEW BARN CUPOLA.

General locality.—Western shore of Prospect Bay on Crab Alley Neck about 1¾ miles north-north-west of Parsons Island. (See Chart No. 32.)

Immediate locality.—Observed station is spindle with weather vane on cupola of barn about 100 yards east-southeast from house on farm belonging to H. C. Norman.

Marks.—Observed station is spindle on cupola.

References.—None necessary.

DULL.

General locality.—Western shore of Prospect Bay on a point at northern side of entrance to a cove about 2½ miles south of Kent Narrows railroad bridge, ¾ mile west-southwest of Hoods Point and 1¼ miles north of Narrows Point. (See Chart No. 32.)

Immediate locality.—Observed station is in marsh land about 1 foot above high water, 30 yards west of shore, 40 yards northeast of shore, and 80 yards north-northwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Kirwan" (N 3° 00' W).....	0	00	00	 1½ miles.
Near peak of "Fishermans Inn".....	10	01	..	 2½ miles.
Chimney of house.....	37	53	..	 1½ miles.
Chimney of house in trees.....	56	09	..	 1¼ miles.
Chimney of house.....	104	49	..	 2¼ miles.
Chimney of old wharf house.....	138	46	..	 4 miles.
Between two chimneys of old house.....	152	08	..	 5¼ miles.
Left tangent of Parsons Island.....	169	41	..	 1¾ miles.
"New Barn Cupola".....	270	45	20	 ¾ mile.
Chimney of ell of house.....	329	06	..	 ¾ mile.

KIRWAN.

General locality.—Western shore of Prospect Bay on a point about $1\frac{1}{4}$ miles south of Kent Narrows railroad bridge and $\frac{1}{4}$ mile southeast of entrance to Kirwans Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 16 yards southeast of shore, 25 yards northwest of shore, 27 yards west of extreme end of point, and 30 yards south-southeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bridge" (N 8° 41' E).....	0	00	00	$1\frac{1}{8}$ miles.
Near peak of "Fishermans Inn".....	9	51	..	$1\frac{1}{8}$ miles.
Chimney of house.....	46	45	..	$1\frac{1}{2}$ miles.
Chimney of house.....	53	28	..	$1\frac{1}{2}$ miles.
Right chimney of house.....	64	43	..	$1\frac{3}{4}$ miles.
Near peak of old house among trees.....	90	50	..	1 mile.
Right peak of large barn.....	129	34	..	$4\frac{1}{8}$ miles.
"Parsons Island Water Tank".....	167	43	10	$3\frac{1}{8}$ miles.
"New Barn Cupola".....	188	29	..	$1\frac{1}{8}$ miles.
Right peak of new barn.....	207	22	..	$\frac{5}{8}$ mile.
Large chimney near end of old house.....	263	43	..	1 mile.
Chimney of house.....	308	51	..	1 mile.

MARSHY.

General locality.—Eastern shore of Prospect Bay about 1 mile south-southeast of Kent Narrows railroad bridge and $\frac{1}{8}$ mile south of entrance to Marshy Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in marsh land about 1 foot above high water, 25 yards east of shore, 50 yards southeast of shore, 40 yards northeast of extreme end of point, and 4 yards north of a line of four small trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bonnet" (S 11° 30' E).....	0	00	00	1 mile.
Dormer window.....	35	26	..	$2\frac{1}{4}$ miles.
Cupola of barn.....	55	25	30	$1\frac{5}{8}$ miles.
Right peak of barn.....	71	14	..	$1\frac{1}{4}$ miles.
Cupola of barn.....	82	58	30	$1\frac{5}{8}$ miles.
Chimney on west peak of house.....	133	20	..	$1\frac{1}{4}$ miles.
South peak of "Fishermans Inn".....	169	06	..	1 mile.
Nail in blaze in locust tree (7 inches diameter).....	184	47	10	32.79 meters.
Chimney at east peak of house near railroad track.....	238	16	..	$\frac{7}{8}$ mile.
Right chimney of house.....	260	23	..	1 mile.
East peak of house among trees.....	325	50	..	$\frac{3}{4}$ mile.

BONNET.

General locality.—Eastern shore of Prospect Bay on Hood Point about $1\frac{1}{2}$ miles southeast of Hog Island and $\frac{1}{2}$ mile west of Piney Point. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh ground about 1 foot above high water, 21 yards west of shore, 12 yards west of inlet, and 55 yards northeast of the extreme end of Hoods Point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"New Barn Cupola" (S 79° 29' W).....	0	00	00	1½ miles.
Chimney of house.....	24	11		1¼ miles.
East gable of barn.....	28	24		1¼ miles.
North chimney of house.....	64	04		2 miles.
South gable of barn.....	90	43		2½ miles.
Chimney on small house.....	137	57		¾ mile.
West gable of house.....	199	06		1½ miles.
Chimney of small house.....	239	13		2½ miles.
Chimney of small house.....	258	39		4¾ miles.
South chimney of house on Kent Island.....	323	24		1¾ miles.
Cupola on barn.....	353	09		1¾ miles.

BRIAN REFERENCE STATION.

General locality.—Eastern shore of Prospect Bay on Brian Point about 1 mile southeast of Piney Point, 2 miles northeast of Parsons Island, and ¾ mile west of entrance to Hog Hole Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 13 yards east of edge of marsh, 14 yards northwest of edge of marsh, 18 yards north of extreme end of point, and 40 yards southwest of a cultivated field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Green" (S 8° 55' E).....	0	00	00	2¾ miles.
Left tangent of woods on Bennett Point.....	4	55		4 miles.
Right tangent of woods on Parsons Island.....	65	33		2¾ miles.
Middle chimney of large brick house.....	84	37		2¾ miles.
Cupola of barn.....	102	34		2¾ miles.
"New Barn Cupola".....	109	56	20	2½ miles.
Left peak of large house.....	112	08		2½ miles.
Near peak of house.....	282	47		½ mile.
Chimney of house.....	344	42		1¼ miles.

GREEN.

General locality.—Eastern shore of Prospect Bay on point at northern side of entrance to Greenwood Creek about ¾ miles northeast of Tilghmans Point and 2¾ miles north of Bennett Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a sanded marsh point about 2 feet above high water, 5 yards northwest of shore, 26 yards northwest of shore, 53 yards east by north of a point of shore, 37 yards southeast by east of a point of shore, and 105 yards south-southwest of a point of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Benn" (S 0° 45' W).....	0	00	00	2¾ miles.
Cupola of barn.....	19	16	10	6 miles.
Right tangent of woods on Tilghmans Point.....	52	01		3½ miles.
"Parsons Island Water Tank".....	115	03	50	2½ miles.
East chimney of brick house.....	124	42		3½ miles.
Peak of small house.....	155	05		4 miles.
Chimney outside of house.....	165	43		4 miles.
Near peak of barn.....	178	20		3 miles.
Peak of house.....	235	45		1 mile.
Chimney of house behind barn.....	316	01		¾ mile.
Square chimney of house.....	345	41		1½ miles.

BENN.

General locality.—Eastern shore of Miles River on Bennett Point at western side of entrance to Wye River. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 75 yards northeast of extreme end of point, 100 yards southwest from edge of wood, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 1 foot above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	//	
"Hough" (N 57° 41' E).....	0	00	00	 3/8 mile.
Cupola of barn.....	70	45	..	 1 mile.
"Rich Neck Water Tank".....	203	33	00	 3 1/2 miles.
South chimney of house on Tilghmans Point Farm.....	215	59	..	 3 miles.
"Parsons Island Water Tank".....	271	55	00	 4 1/2 miles.
Right tangent of house.....	288	21	..	 6 3/8 miles.

HOUGH.

General locality.—Northwestern side of entrance to Wye River on a point about 3/8 mile northeast of Miles River and 1/2 mile southwest of north end of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is on a grass point about 1 foot above high water, 16 yards north of shore, 22 yards south of shore, 15 yards west of extreme end of point, 11 yards east of small pool in marsh, and 200 yards east of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	//	
"Won" (N 09° 29' E).....	0	00	00	 3/8 mile.
Near peak of building.....	7	22	..	 2 3/8 miles.
Right side of chimney of house.....	17	20	..	 2 7/8 miles.
Near peak of long barn.....	28	43	..	 1 1/4 miles.
Piazza post of house in woods.....	62	14	..	 1/2 mile.
Windmill.....	128	24	..	 3/4 mile.
Windmill.....	181	48	..	 4 1/4 miles.
Tall, slender tree in woods.....	271	57	..	 200 yards.
Black walnut tree.....	339	23	..	 200 yards.

WON.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west about 1/2 mile northwest of northern end of Bruffs Island and 3/4 mile northeast of southern end of Bennett Point. (See Chart No. 32.)

Immediate locality.—Observed station is on small marsh point, about 1 foot above high water, 4 yards northwest of shore, 4 yards west of shore, 4 yards north of shore, and 40 yards southeast of large lone black-walnut tree. Cement monument marking reference station is 22.80 meters S 15° 31' W of observed station.

Marks.—Observed station is nail in center of 2-inch stub projecting 5 inches above 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Nose" (N 28° 05' E).....	0	00	00	1½ mile.
Near peak of large barn.....	23	20	..	¾ mile.
Side peak of roof of house.....	25	18	..	¾ mile.
Near peak of house.....	47	26	..	1¾ miles.
Left large chimney of house in woods.....	81	08	..	½ mile.
Right corner of building on Bruffs Island... ..	98	41	..	½ mile.
Windmill.....	126	52	40	1¼ miles.
Near peak of fisherman's shanty.....	161	03	..	100 yards.
REFERENCE STATION.....	167	25	50	22.80 meters.
Nail in blaze in cedar tree (2 inches diameter).....	210	23	00	12.54 meters.
Nail in blaze in walnut tree (3 inches diameter).....	262	30	10	10.81 meters.
Nail in blaze in walnut tree (30 inches diameter).....	290	06	10	38.12 meters.
Right corner of right chimney of house....	337	19	..	½ mile.

NOSE.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west on a point about ⅝ mile north-northwest of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 4 yards southwest of shore, 6 yards north of shore, 14 yards west-northwest of extreme end of point, and 34 yards east of a row of locust trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Stop" (N 12° 09' E).....	0	00	00	¾ mile.
Church cross.....	1	55	..	2 miles.
Chimney of cottage.....	3	03	..	1¾ miles.
Near peak of house.....	37	22	..	¾ mile.
Left peak of house.....	67	25	..	½ mile.
Right corner of house on Bruffs Island.....	152	55	..	¾ mile.
"St. Michaels P. E. Church Spire".....	183	28	10	5¾ miles.
"St. Michaels Water Tank".....	184	51	20	5¾ miles.
Nail in blaze in locust tree (8 inches diameter).....	237	58	50	34.45 meters.
Nail in blaze in locust tree (9 inches diameter).....	256	32	10	28.31 meters.
Near peak of large house, between two chimneys.....	266	09	..	¼ mile.
Nail in blaze in locust tree (7 inches diameter).....	280	50	50	31.44 meters.
Tangent of point.....	316	16	..	100 yards.

STOP.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west on a point about 1 mile north of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is on edge of pasture land about 3 feet above high water, 20 yards west of shore, 40 yards north by east of shore, and 50 yards south by west of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Orb" (N 21° 16' W).....	0	00	00	1/4 mile.
Near peak of barn.....	3	30	..	3/4 mile.
Nail in blaze of hackberry tree (5 inches diameter).....	46	52	20	7.57 meters.
Side peak of house.....	94	01	..	3/4 mile.
Near peak of house.....	147	17	..	1/2 mile.
Nail in blaze in branch of mulberry tree (5 inches diameter).....	198	20	00	20.61 meters.
Peak between two chimneys of house.....	239	37	..	3/8 mile.
Left corner of corn house.....	252	58	..	1/2 mile.

ORB.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west on a point about 1 3/8 miles north of Bruffs Island and 3/4 mile southwest of Cedar Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 6 yards southwest of shore, 7 yards northwest of shore, 6 yards north of shore, and southeast of a point of land 5 feet higher than station.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Piney" (N 6° 05' E).....	0	00	00	1/4 mile.
Chimney of house on Drum Point.....	22	11	..	3/4 mile.
Left peak of house.....	38	32	..	1 1/8 miles.
Left peak of house.....	87	51	..	3/4 mile.
Right peak of large barn.....	97	50	..	3/4 mile.
Near peak of house.....	130	37	..	3/4 mile.
Near peak of large barn.....	137	36	..	3/4 mile.
Nail in blaze in locust tree (3 inches diameter).....	251	18	20	18.39 meters.
Nail in blaze in oak tree (3 1/2 feet diameter).....	307	28	10	23.34 meters.
Nail in blaze in gum tree (6 inches diameter).....	322	50	50	20.17 meters.
Right corner of brick house.....	340	49	..	1/2 mile.

PINEY.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west about 3/4 mile southwest of Drum Point and 1 3/4 miles north of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 6 feet above high water, 15 yards northwest of point, 8 yards north of top of bank, 9 yards west of trees at top of bank, and 55 yards northeast of another point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ferry" (N 57° 08' E).....	0	00	00	3/8 mile.
Nail in blaze in locust tree (4 inches diameter).....	3	32	20	8.85 meters.
Near peak of house.....	4	19	..	1 1/8 miles.
Near peak of house.....	35	43	..	3/8 mile.
Nail in blaze in hackberry tree (5 inches diameter).....	51	12	00	10.66 meters.
Near peak of house.....	97	31	..	1 1/8 miles.

References—Continued.

	°	'	"	
Near peak of hip-roof barn.....	102	33	..	1½ miles.
Left peak of boathouse.....	115	53	..	2½ miles.
Near corner of brick house.....	211	32	..	½ mile.
Nail in blaze in locust tree (7 inches diameter).....	318	54	30	18.07 meters.

FERRY.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west on Drum Point, about ¾ mile west of Cedar Point. (See Chart No. 32.)

Immediate locality.—Observed station is in a pasture with paling fence on northwest and west-southwest sides about 4 feet above high water, 6 yards northwest of shore, 10 yards west of shore, 20 yards northeast by east of fence at county road, and 40 yards southeast of fence near small house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 8 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Owe" (N 66° 42' E).....	0	00	00	¾ mile.
Near peak of house.....	5	08	..	1¼ miles.
Near peak of house.....	19	25	..	1¾ miles.
Cupola of building.....	60	57	..	1 mile.
Near peak of house.....	105	29	..	¾ mile.
Peak between two chimneys of house.....	138	01	..	1½ miles.
Nail in blaze in locust tree (5 inches diameter).....	171	18	00	26.92 meters.
Nail in blaze in hackberry tree (7 inches diameter).....	202	47	10	35.04 meters.
Nail in blaze in hackberry tree (9 inches diameter).....	242	09	00	34.93 meters.
Left corner of large brick house.....	281	16	..	¼ mile.
Near peak of house.....	357	27	..	¾ mile.

OWE.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west on a point about ¾ mile east-northeast of Drum Point and 1 mile south-southwest of entrance to Wye Narrows. (See Chart No. 32.)

Immediate locality.—Observed station is on a grassy point about 2 feet above high water, 9 yards north of shore, 11 yards west-southwest of shore, 10 yards west of extreme end of point, and 75 yards east-southeast of a house 12 feet above high water.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hook" (N 7° 36' W).....	0	00	00	¼ mile.
Peak of near gable of house.....	23	37	..	2½ miles.
Near corner of house.....	89	43	..	¾ mile.
Right peak of small house.....	144	13	..	¾ mile.
Baldwin windmill.....	167	05	40	1½ miles.
Left peak of house.....	204	38	..	1¾ miles.
Near corner of chimney outside left end of house.....	236	39	..	¾ mile.
Left tangent of large brick house.....	253	44	..	1¼ miles.
Nail in blaze in black walnut tree (5 feet diameter).....	287	02	10	31.44 meters.
Nail in blaze in black walnut tree (3 feet 6 inches diameter).....	331	58	10	31.63 meters.

HOOK.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west about $\frac{3}{4}$ mile southwest of entrance to Wye Narrows and $\frac{1}{4}$ mile south of entrance to a cove. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 10 feet above high water, 3 yards west of top of bank, 4 yards northeast of top of bank lined with cedars, 7 yards north-northwest of extreme end of point of bank at left of cedars, and north of a long, low peninsula that separates a small pond from river.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Knee" (N 15° 04' E).....	0	00	00	$\frac{1}{2}$ mile.
Near peak of large barn.....	5	01	..	$2\frac{1}{4}$ miles.
Spindle on cupola of barn.....	33	14	..	$1\frac{1}{8}$ miles.
Left corner of large chimney of small house... 109	52	..	..	$\frac{7}{8}$ mile.
Left peak of house.....	129	38	..	$\frac{7}{8}$ mile.
Near peak of large barn.....	156	32	..	$1\frac{1}{8}$ miles.
Near peak of large barn.....	163	03	..	$\frac{7}{8}$ mile.
Nail in blaze in cedar tree (4 inches diameter).....	175	23	40	6.99 meters.
Nail in blaze in cedar tree (3 inches diameter).....	231	37	00	4.94 meters.
Nail in blaze in oak tree (8 inches diameter).. 271	06	10	..	11.41 meters.

KNEE.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west about $\frac{1}{4}$ mile west-southwest of entrance to Wye Narrows. (See Chart No. 32.)

Immediate locality.—Observed station is on a narrow strip of lowland about 1 foot above high water, 4 yards west of shore, 12 yards east of cut in bank, and 40 yards south of bank 8 feet high with few trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bee" (N 59° 35' E).....	0	00	00	$\frac{5}{8}$ mile.
Large pine tree on point.....	26	46	..	$\frac{1}{2}$ mile.
Smoke pipe on small building.....	84	59	..	$\frac{1}{2}$ mile.
Baldwin windmill.....	108	08	10	$2\frac{1}{4}$ miles.
Peak of near gable of Baldwin house.....	108	29	..	$2\frac{1}{4}$ miles.
Large chimney of large house.....	120	43	..	1 mile.
Lightning rod on Bryan house.....	129	59	..	$\frac{3}{4}$ mile.
Nail in blaze in oak tree (12 inches diameter). 165	06	20	..	14.60 meters.
Nail in blaze in locust tree (7 inches diameter).....	208	48	10	4.86 meters.
Nail in blaze in twisted cedar bush.....	289	36	10	8.79 meters.
Chimney of house.....	320	11	..	$1\frac{7}{8}$ miles.

NO.

General locality.—On the western shore of the continuation of the branch of Wye River bounding Wye Island on the west, about $\frac{3}{8}$ mile west-northwest of entrance to Wye Narrows on point at south end of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on a point about 1 foot above high water, 4 yards southwest of shore, 4 yards north of shore, 5 yards west of extreme end of point, and east of trees on bank 5 feet high.

Survey of Oyster Bars, Queen Annes County, Md.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Oysters" (N 64° 35' E).....	0	00	00	 ¼ mile.
Near peak of house.....	59	59	..	 ⅞ mile.
Near end of corn house.....	94	01	..	 1 mile.
Cupola of barn.....	118	29	..	 2 miles.
Right corner of Bryan house.....	128	36	..	 1½ miles.
Nail in blaze in locust tree (4 inches diameter).....	160	05	30	 26.17 meters.
Nail in blaze in oak tree (4 inches diameter) ..	234	11	20	 5.42 meters.
Nail in blaze in oak tree (8 inches diameter) ..	290	08	20	 4.73 meters.
Spindle on barn cupola.....	294	51	..	 ¾ mile.
Left corner of large house.....	300	00	..	 ⅝ mile.
Left peak of house.....	315	20	..	 1¾ miles.

OYSTERS.

General locality.—Eastern shore of the continuation of the branch of Wye River bounding Wye Island on the west about ¼ mile north of entrance to Wye Narrows on point at south side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is in a clump of small trees on a point about 3 feet above high water, 6 yards south-southeast of edge of bank, 7 yards west of point of bank, and 8 yards east-northeast of edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"June" (S 6° 39' W).....	0	00	00	 ⅝ mile.
Right corner of Bryan house.....	14	46	..	 1¼ miles.
Chimney of cabin.....	111	07	..	 ½ mile.
Nail in blaze in oak tree (6 inches diameter). 118	15	00	.....	3.97 meters.
Chimney of large house.....	156	41	..	 1½ miles.
Nail in blaze in oak tree (8 inches diameter). 291	22	50	.....	4.71 meters.
Nail in blaze in walnut tree (7 inches diameter).....	336	17	30	 11.31 meters.

BEE.

General locality.—Northern shore of Wye Narrows at northern side of western entrance to Wye Narrows. (See Chart No. 32.)

Immediate locality.—Observed station is in woods about 4 feet above high water, 7 yards east of edge of bank, 11 yards northwest of edge of bank, and 13 yards north of point of bank near marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Close" (S 2° 44' W).....	0	00	00	 ¼ mile.
Right corner of Bryan house.....	30	15	..	 1½ miles.
Near peak of house.....	68	01	..	 ⅞ mile.
Nail in blaze in oak tree (4 inches diameter). 201	58	50	.....	2.10 meters.
Nail in blaze in oak tree (24 inches diameter). 314	05	30	.....	8.64 meters.
Nail in blaze in oak tree (8 inches diameter). 345	50	40	.....	1.86 meters.

CLOSE.

General locality.—Northern shore of Wye Island at southern side of western entrance to Wye Narrows. (See Chart No. 32.)

Immediate locality.—Observed station is in edge of cultivated land about 12 feet above high water, 3 yards south of edge of bank, 5 yards west-southwest of top of bank, 18 yards west of lone pine tree, and 17 yards east of cut in bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"June" (S 56° 21' W).....	0	00	00	 ¼ mile.
Nail in blaze in walnut tree (3 feet diameter).....	0	48	20	 56.49 meters.
Right corner of large brick house.....	4	03	..	 1¼ miles.
Near peak of house.....	30	47	..	 ⅝ mile.
Windmill.....	34	39	..	 ⅝ mile.
Spindle on barn cupola.....	102	21	..	 1½ miles.
Left corner of house.....	160	24	..	 ¾ mile.
Nail in blaze in pine tree (2 feet diameter).....	203	47	40	 18.28 meters.
Nail in blaze in black walnut tree (10 inches diameter).....	226	19	40	 27.00 meters.
Left peak of large building.....	246	35	..	 ¾ mile.
Right peak of corn house.....	306	57	..	 ½ mile.

JUNE.

General locality.—On Wye Island on eastern shore of the branch of Wye River bounding Wye Island on the west on a point at northern side of entrance to a cove about ¼ mile southwest of entrance to Wye Narrows. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 10 yards south-southeast of shore, 20 yards southwest of lines of trees and marsh, and 50 yards north of twin oak trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Chin" (S 24° 00' W).....	0	00	00	 ⅜ mile.
Near peak of Bryan house.....	11	02	..	 ⅝ mile.
Right corner of large house.....	37	22	..	 1 mile.
Left corner of near chimney of house.....	79	57	..	 ¾ mile.
Near corner of house.....	150	56	..	 1½ miles.
Spindle on cupola of barn.....	154	20	..	 1¾ miles.
Nail in blaze in one of twin oak trees (30 inches diameter).....	201	55	10	 19.32 meters.
Nail in blaze in one of twin oak trees (30 inches diameter).....	286	10	30	 43.17 meters.
Nail in blaze in oak tree (15 inches diameter).....	325	12	00	 44.45 meters.

CHIN.

General locality.—On Wye Island on the eastern shore of the branch of Wye River bounding Wye Island on the west on a point about 1 mile northeast of Cedar Point and ¾ mile south-southwest of entrance to Wye Narrows. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 6 yards northeast of shore, 20 and 40 yards south of shore, and 7 yards east of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Aller" (S 43° 03' E).....	0	00	00	 300 yards.
Near peak of large barn.....	46	47	..	 1½ miles.
Peak between chimneys of house.....	81	23	..	 1¼ miles.
Near peak of Bryan house.....	90	55	..	 ¼ mile.
Right corner of house in woods.....	221	04	..	 ¾ mile.
Nail in blaze in pine tree (10 inches diameter).....	239	05	00	 16.78 meters.
Nail in blaze in pine tree (5 inches diameter).....	252	13	40	 19.51 meters.
Nail in blaze in pine tree (6 inches diameter).....	319	42	50	 11.68 meters.

ALLER.

General locality.—On Wye Island on the eastern shore of the branch of Wye River bounding Wye Island on the west about 1 mile east-northeast of Drum Point and at northern side of entrance to a cove. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh land between two large pine trees about 1 foot above high water, 17 yards northeast of a small point, 15 yards southeast of a short cut in shore, and 9 yards southwest of edge of cultivated land.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Twist" (S 0° 21' W).....	0	00	00	 ¾ mile.
Cupola of building.....	12	08	..	 1 mile.
Left peak of house.....	29	06	..	 1¾ miles.
Peak between two chimneys of large house..	42	22	..	 2¼ miles.
Chimney outside left end of house.....	55	22	..	 1½ miles.
Right corner of house.....	76	24	..	 ¾ mile.
Nail in blaze in pine tree (20 inches diameter).....	141	08	50	 20.90 meters.
Peak of side gable of house.....	255	06	..	 ¼ mile.
Near corner of house.....	279	17	..	 ⅝ mile.
Nail in blaze in pine tree (18 inches diameter).....	279	50	10	 28.52 meters.
Left tangent of large square chimney of house.	313	06	..	 ¾ mile.

TWIST.

General locality.—On Wye Island on the eastern shore of the branch of Wye River bounding Wye Island on the west at northern side of entrance to a small cove about 1 mile east of Cedar Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 11 yards southeast of point, 8 yards south of shore at point of higher and solid land with trees, 8 yards west of trees, 18 yards west-southwest of point, and 33 yards north of shore of cove.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Wide" (S 64° 00' W).....	0	00	00	 ¼ mile.
Chimney outside southeast end of house....	12	57	..	 1 mile.
Near corner of brick house.....	18	23	..	 1½ miles.
Left corner of brick house.....	42	57	..	 1¾ miles.

References—Continued.

	°	'	"	
Left corner of house.....	67	54	..	1/4 mile.
Near peak of barn.....	112	53	..	2 miles.
Nail in blaze in oak tree (14 inches diameter). 151	12	20	.....	7.55 meters.
Nail in blaze in oak tree (16 inches diameter). 174	30	30	.....	7.90 meters.
Nail in blaze in hackberry tree (4 inches diameter).....	202	44	20	 8.85 meters.
Gum tree.....	231	38	..	52 yards.
Right peak of corn house.....	254	49	..	1/4 mile.

WIDE.

General locality.—On Wye Island on the eastern shore of the branch of Wye River bounding Wye Island on the west on a point at western side of entrance to a small cove about 3/4 mile east of Cedar Point. (See Chart No. 32.)

Immediate locality.—Observed station is in marsh land surrounded by water bushes about 1 foot above high water, 12 yards south of shore, 16 yards southeast of shore, 20 yards east of shore, 20 yards northeast of trees, 11 yards northeast of a wire fence, 100 yards west of entrance to creek, and near point of higher land and trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Darce" (S 81° 55' W).....	0	00	00	 3/4 mile.
Near corner of brick house.....	3	40	..	1 1/4 miles.
Left corner of brick house.....	34	45	..	1 mile.
Left corner of house.....	77	22	..	1/2 mile.
Peak of near gable of house.....	134	03	..	3/4 mile.
Near peak of house.....	165	09	..	5/8 mile.
Nail in blaze in fence post.....	275	38	20	 13.21 meters.
Nail in blaze in oak tree (6 inches diameter). 315	29	20	.....	18.48 meters.
Nail in blaze in oak tree (5 inches diameter). 340	38	40	.....	18.14 meters.
Right corner of house.....	359	17	..	3/4 mile.

DARCE.

General locality.—On Wye Island on the eastern shore of the branch of Wye River bounding Wye Island on the west on Cedar Point at ferry landing about 1/4 mile south of Drum Point. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 10 feet above high water, 8 yards south of point of bank, 23 yards northwest of a house, and 55 yards east-northeast of ferry landing at foot of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below surface of monument.

References.—

	°	'	"	
"Twixt" (S 39° 52' W).....	0	00	00	 1/2 mile.
Near corner of brick house.....	50	50	..	5/8 mile.
Left corner of brick house.....	130	53	..	1/2 mile.
Near peak of house.....	133	57	..	1 1/4 miles.
Cross on church.....	143	52	40	 3/4 mile.
Left corner of house.....	187	14	..	3/4 mile.
Near peak of house.....	215	40	..	1 1/2 miles.
Left corner of shed.....	255	43	50	 27.25 meters.
Right corner of house.....	280	48	50	 21.98 meters.
Peak between two chimneys of house.....	350	24	..	1 1/4 miles.

TWIXT.

General locality.—On Wye Island on the eastern shore of the branch of Wye River bounding Wye Island on the west about $\frac{1}{8}$ mile southwest of Cedar Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a small marsh island about 1 foot above high water, 3 yards north of shore, 4 yards east of shore, 7 yards south of shore, 9 yards west of point of shore, and 20 yards west of mainland.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Star" (S 9° 37' W).....	0	00	00	 $\frac{1}{8}$ mile.
Peak between two chimneys of house.....	19	26	..	 $1\frac{1}{8}$ miles.
Left corner of brick house.....	94	37	..	 $\frac{1}{2}$ mile.
Chimney in middle of large brick house.....	171	25	..	 $\frac{1}{2}$ mile.
Left corner of barn.....	227	11	..	 $\frac{1}{8}$ mile.

STAR.

General locality.—On Wye Island on the eastern shore of the branch of Wye River bounding Wye Island on the west, about $1\frac{1}{2}$ miles north of Bruffs Island and $\frac{1}{4}$ mile south-southwest of Cedar Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a soft marsh point about 1 foot above high water, 8 yards north of shore, 9 yards south of shore, and 13 yards east of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Leaven" (S 15° 09' E).....	0	00	00	 $\frac{1}{2}$ mile.
Near peak of hip roof of large barn.....	5	16	..	 $\frac{3}{4}$ mile.
"St. Michaels Water Tank".....	32	26	30	 $6\frac{7}{8}$ miles.
Peak between two chimneys of large house..	46	44	..	 1 mile.
Left corner of chimney outside brick house..	135	14	..	 $\frac{1}{4}$ mile.
Left corner of large barn.....	136	39	..	 $\frac{1}{2}$ mile.
Chimney in middle of large brick house.....	197	42	..	 $\frac{3}{4}$ mile.
Nail in blaze in locust tree (4 inches diameter).....	215	09	10	 19.78 meters.
Nail in blaze in gum tree (3 inches diameter).	232	40	40	 18.75 meters.
Nail in blaze in locust tree (8 inches diameter).....	248	59	30	 22.21 meters.

LEAVEN.

General locality.—On Wye Island on the eastern shore of the branch of Wye River bounding Wye Island on the west about $1\frac{1}{2}$ miles north-northeast of Bruffs Island and $\frac{5}{8}$ mile south of Cedar Point. (See Chart No. 32.)

Immediate locality.—Observed station is in northwest corner of cultivated field about 10 feet above high water, 4 yards southeast of edge of bank, 5 yards southwest of scant locust woods, and 8 yards east-northeast of point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Snout" (S 27° 53' W).....	0	00	00	 $\frac{3}{8}$ mile.
Large oak tree.....	9	21	..	 $1\frac{1}{8}$ miles.
Peak between two chimneys of large house..	29	06	..	 $\frac{3}{4}$ mile.
Left corner of large chimney outside near end of house.....	113	37	..	 $\frac{1}{8}$ mile.

References—Continued.

	°	'	"	
Chimney outside of house.....	152	54	..	5½ mile.
Nail in blaze in locust tree (12 inches diameter).....	167	02	50	5.63 meters.
Nail in blaze in locust tree (10 inches diameter).....	213	18	00	15.03 meters.
Nail in blaze in locust tree (16 inches diameter).....	240	36	40	12.01 meters.
Near peak of house.....	315	01	..	1½ mile.

SNOUT.

General locality.—On Wye Island on the eastern shore of the branch of Wye River bounding Wye Island on the west about ¾ mile north of Bruffs Island and ½ mile north of Bordley Point. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 12 feet above high water, 30 yards east by south of edge of bank, 65 yards south of large cherry tree in side of bank at fence, 65 yards southwest of rail fence, 70 yards northeast of a small clump of trees at edge of bank, and 400 yards west by north of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"South" (S 20° 34' E).....	0	00	00	½ mile.
Left peak of boathouse.....	19	10	..	7⁄8 mile.
"St. Michaels P. E. Church Spire".....	38	07	30	6¼ miles.
"St. Michaels Water Tank".....	39	30	10	6½ miles.
Nail in blaze in locust tree (10 inches diameter).....	49	21	30	64.78 meters.
Peak of house between two chimneys.....	99	02	..	½ mile.
Near peak of small house.....	111	45	..	½ mile.
Nail in blaze in tree (8 inches diameter).....	179	42	10	34.39 meters.
Near peak of barn.....	186	34	..	1¼ miles.
Left corner of house.....	203	36	..	1¾ miles.
Nail in blaze in fence post.....	246	50	10	63.29 meters.
Near peak of house.....	249	00	..	¾ mile.
Left peak of house.....	296	41	50	¾ mile.

SOUTH.

General locality.—On southwestern end of Wye Island on Bordley Point on the northern shore of the junction of the two branches of Wye River bounding Wye Island, about 3⁄8 mile north-northeast of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is in a pasture on a rounded point about 10 feet above high water, 11 yards northeast of edge of field, 13 yards north of edge of field, 22 yards northwest of edge of field, 30 yards southeast of cut in cliff, and 50 yards southwest of point of water bushes at gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Flat" (N 55° 27' E).....	0	00	00	½ mile.
Right chimney of house.....	19	30	..	1¼ miles.
Windmill.....	64	34	30	1¼ miles.
Spindle on barn cupola.....	134	55	20	1¼ miles.
Left chimney of house in woods.....	153	45	..	½ mile.
Left peak of building.....	173	45	..	4½ miles.
Peak between two chimneys of house.....	244	27	..	¾ mile.
Left chimney of house.....	317	37	..	¾ mile.
Near peak of house.....	343	21	..	2 miles.

FLAT.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on a point between two coves about 1 mile northeast of Bruffs Island and $\frac{1}{2}$ mile northeast of Bordley Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 8 yards north of shore, 8 yards southwest of shore, 12 yards west of extreme end of point, 17 yards east of south end of line of several trees on edge of bank 3 feet high, and 45 yards east of a black gum tree 5 feet in diameter at ground.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Albert" (N 84° 31' E).....	0	00	00	 $\frac{1}{2}$ mile.
Left corner of tower of house.....	30	33	..	 $1\frac{1}{4}$ miles.
Windmill.....	62	55	40	 $1\frac{1}{2}$ miles.
Spindle on barn cupola.....	119	34	..	 $1\frac{3}{4}$ miles.
Front peak of boathouse.....	134	02	..	 1 mile.
Left tangent of black gum tree.....	158	06	40	 44 yards.
Near peak of house.....	249	34	..	 $\frac{3}{4}$ mile.
Spindle on cupola.....	351	11	10	 $\frac{3}{4}$ mile.
Windmill.....	352	15	30	 $\frac{3}{4}$ mile.
Near peak of Baldwin house.....	354	50	..	 $\frac{3}{4}$ mile.

ALBERT.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south on a point about $1\frac{1}{4}$ miles east-northeast of north end of Bruffs Island, and opposite entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 17 yards northwest of shore, 28 yards east of shore, 35 yards south of shore, and 75 yards north-northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Le Seur" (N 1° 03' E).....	0	00	00	 300 yards.
Baldwin windmill.....	65	11	40	 $\frac{3}{8}$ mile.
Flagstaff on Baldwin boat house.....	67	59	..	 400 yards.
Windmill on wooden tower.....	125	16	30	 1 mile.
Peak of house with several chimneys.....	127	08	..	 1 mile.
Chimney outside near end of old house.....	170	05	..	 1 mile.
Front peak of boat house.....	231	10	..	 $1\frac{1}{4}$ miles.
Peak between two chimneys of house.....	269	40	..	 $1\frac{3}{4}$ miles.
Left peak of house.....	274	45	..	 $\frac{3}{8}$ mile.
Peak of house.....	347	47	..	 $\frac{3}{4}$ mile.

LE SEUR.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south about $\frac{1}{2}$ mile north of a prominent point opposite entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a clump of small trees about 3 feet above high water, 11 yards east of shore, 12 yards southwest of shore on line to next point, and 12 yards north by east of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Attila" (N 31° 07' E).....	0	00	00	 ¼ mile.
Near peak of large barn.....	56	55	..	 ⅝ mile.
Spindle on cupola.....	61	52	50	 ¼ mile.
Right corner of chimney of Baldwin house..	72	24	..	 ¼ mile.
Nail in blaze in walnut tree (4 inches diam- eter).....	140	45	50	 4.11 meters.
Nail in blaze in walnut tree (5 inches diam- eter).....	201	19	40	 7.60 meters.
Nail in blaze in walnut tree (3 inches diam- eter).....	255	56	30	 6.74 meters.
Nail in blaze in walnut tree (3 inches diam- eter).....	304	08	10	 7.27 meters.

ATTILA.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south about ¾ mile north of entrance to Lloyd Creek at north side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on slope of a point about 3 feet above high water, 10 yards west of shore, 10 yards north-northeast of shore, and 11 yards northwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Tobine" (N 15° 18' E).....	0	00	00	 ¼ mile.
Near peak of very large barn.....	97	30	..	 ⅝ mile.
Near peak of house.....	104	53	..	 ⅝ mile.
Spindle on cupola.....	128	31	50	 ¼ mile.
Left corner of Baldwin house.....	132	48	..	 ¼ mile.
Flagpole on wharf house.....	146	43	..	 ¼ mile.
Windmill.....	163	31	..	 1¼ miles.
Nail in blaze in cedar stump (10 inches diam- eter).....	197	07	20	 8.36 meters.
Nail in blaze in cedar tree (8 inches diam- eter).....	347	34	10	 38.64 meters.

TOBINE.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south about ¾ mile north of entrance to Lloyd Creek on point at north side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on point of a cultivated field about 6 feet above high water, 4 yards north of edge of field, 4 yards southwest of edge of field, 5 yards west-northwest of point of field, and ¼ mile east-southeast of a barn with cupola.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Sang" (N 6° 21' W).....	0	00	00	 ¼ mile.
Right corner of house.....	16	19	..	 ⅝ mile.
Near peak of large barn.....	143	19	..	 ½ mile.
Cupola of Baldwin barn.....	173	35	10	 ½ mile.
Right peak of Baldwin house.....	175	17	..	 ½ mile.
Windmill.....	187	35	..	 1½ miles.
Near peak of house.....	249	12	..	 1½ miles.
Cupola of building.....	304	50	..	 ¼ mile.

SANG.

J

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south about $1\frac{1}{4}$ miles north of entrance to Lloyd Creek and $\frac{5}{8}$ mile west of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on bank about 12 feet above high water between two cuts in bank, 2 yards west of edge of bank, 3 yards northwest of edge of bank, 4 yards southwest of edge of bank, 32 yards from bottom of northern cut in bank, 52 yards from bottom of southern cut in bank, and 95 yards south-southwest of tree-lined gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Turn" (N 48° 08' E).....	0	00	00	 $\frac{1}{4}$ mile.
Tangent of woods.....	41	45	..	 2 miles.
Tangent of point.....	56	52	..	 $\frac{3}{8}$ mile.
Right peak of large barn.....	100	25	..	 $\frac{3}{4}$ mile.
Baldwin windmill.....	121	06	..	 $\frac{3}{4}$ mile.
Peak of near gable of Baldwin house.....	122	05	..	 $\frac{3}{4}$ mile.
Near peak of ell of house.....	199	14	..	 $\frac{3}{8}$ mile.
Left corner of house.....	256	56	..	 $\frac{1}{4}$ mile.
Left peak of house.....	281	53	..	 $\frac{1}{4}$ mile.

TURN.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south, about $\frac{1}{4}$ mile west of entrance to Dividing Creek on point at western side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on bank in a cultivated field, about 8 feet above high water, 5 yards northwest of edge of bank, 6 yards north of edge of bank, 7 yards west of edge of bank, 50 yards south-southwest of entrance to a small creek, and 55 yards east of a dead sycamore tree in field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Go" (S 84° 55' E).....	0	00	00	 $\frac{1}{8}$ mile.
Near peak of small house.....	32	18	..	 $1\frac{1}{8}$ miles.
Right peak of large barn.....	67	07	..	 $\frac{3}{4}$ mile.
Baldwin windmill.....	85	55	..	 $\frac{7}{8}$ mile.
Near peak of gable of Baldwin house.....	86	21	..	 $\frac{7}{8}$ mile.
Nail in blaze in wild cherry tree (3 inches diameter).....	128	20	10	 23.08 meters.
Chimney outside near end of house.....	179	44	..	 $\frac{3}{8}$ mile.
Nail in blaze in locust tree (4 inches diameter).....	255	50	00	 18.85 meters.
Nail in blaze in chestnut stump with second growth (14 inches diameter).....	279	53	10	 12.93 meters.

GO.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south, on a point between two coves about $\frac{1}{4}$ mile west of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on grassy beach at high water, about 2 yards south of foot of bank 4 feet high covered with dense growth of young trees, and 37 yards from entrance to a small creek. Cement monument marking reference station is 19.06 meters N 22° 35' E of observed station.

Marks.—Observed station is nail in center of 2-inch pine stub projecting 2 inches above 2-inch tile pipe with top 2 inches below surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Divide" (N 89° 24' E).....	0	00	00	3½ mile.
Near peak of shanty.....	48	16	..	7½ mile.
Chimney of house.....	51	46	..	7½ mile.
Peak of gable on Baldwin house.....	104	12	..	7½ mile.
Baldwin windmill.....	104	13	30	7½ mile.
Near corner of square chimney of house.....	159	10	..	7¼ mile.
Cupola on barn.....	164	20	..	¾ mile.
Nail in blaze in gum tree (4 inches diameter). 249	05	50	..	6.68 meters.
Nail in blaze in gum tree (2 inches diameter). 272	16	30	..	5.73 meters.
REFERENCE STATION.....	293	11	20	19.06 meters.
Nail in blaze in gum tree (4 inches diameter). 313	07	10	..	4.15 meters.

DIVIDE.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south, on point at eastern side of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in point of woods, about 4 feet above high water, 2 yards west-northwest of edge of bank, 8 yards east-northeast of edge of bank, and 11 yards north-northeast of point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Princess" (N 53° 04' E).....	0	00	00	1½ mile.
Right tangent of old wharf.....	12	44	..	7¼ mile.
Near peak of large barn.....	50	24	..	1¾ miles.
Chimney of house.....	141	53	..	7½ mile.
Baldwin windmill.....	162	18	30	1 mile.
Right chimney of house.....	189	13	20	2 miles.
Peak of house between two chimneys.....	195	40	..	2½ miles.
Nail in blaze in oak tree (14 inches diameter). 232	30	30	..	4.05 meters.
Nail in blaze in gnarled oak tree (8 inches diameter).....	280	24	50	9.98 meters.
Nail in blaze in oak tree (30 inches diameter). 316	39	20	..	8.41 meters.

PRINCESS.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south, about 7½ mile northeast of entrance to Dividing Creek and 3½ mile west of entrance to Granary Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in marsh land, about 1 foot above high water, 4 yards north of shore, 18 yards east by north of a large oak tree at shore, 4 yards south of foot of bank 10 feet high covered with vegetation, and 10 yards west by south of a white oak tree on bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Philip" (S 83° 05' E).....	0	00	00	3½ mile.
Chimney of house on Pickerings Creek.....	15	16	..	1¾ miles.
Right peak of large barn.....	110	22	..	1 mile.
Baldwin windmill.....	121	01	..	1¼ miles.

References—Continued.

	°	'	"	
Cupola of Baldwin stable.....	121	40	..	1¼ miles.
Nail in blaze in white oak tree (3 inches diameter).....	163	26	00	5.65 meters.
Nail in blaze in cedar tree (14 inches diameter).....	255	36	20	3.01 meters.
Right tangent of old wharf.....	351	19	..	150 yards.

PHILIP.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south, on western side of entrance to Granary Creek and ½ mile east of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is about 1 foot above high water, 3 yards north of shore, 9 yards south-southwest of shore of creek, 9 yards west of extreme end of point, and 6 yards southeast of point of bank 4 feet high. Cement monument marking reference station is 4.62 meters N 18° 12' E of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub projecting 2 inches above 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Granary" (S 63° 59' E).....	0	00	00	¼ mile.
Baldwin windmill.....	113	44	20	1½ miles.
Near peak of ell of house.....	141	49	..	1¼ miles.
Nail in blaze in cedar tree (3 inches diameter).....	169	10	50	9.33 meters.
Nail in blaze in pine tree (6 inches diameter).....	210	13	30	18.09 meters.
Nail in blaze in oak tree (7 inches diameter).....	238	45	30	4.41 meters.
REFERENCE STATION.....	262	11	40	4.62 meters.
Tangent of point.....	321	20	..	¼ mile.
Near peak of large building.....	358	32	..	2 miles.

GRANARY.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on point at eastern side of entrance to Granary Creek. (See Chart No. 32.)

Immediate locality.—Observed station is among water bushes on marsh land about 1 foot above high water, 10 yards northeast of shore, 11 yards west of shore, 12 yards north by west of extreme end of point, and 50 yards from trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Morn" (N 89° 30' E).....	0	00	00	⅓ mile.
Large chimney of building.....	24	48	..	1¼ miles.
Right tangent of point.....	85	34	..	¼ mile.
Left end of barn.....	176	08	..	1½ miles.
Left tangent of old wharf.....	199	54	..	½ mile.

MORN.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south about 300 yards east of entrance to Granary Creek and ¾ mile northwest of entrance to Pickering Creek. (See Chart No. 32.)

Immediate locality.—Observed station is about 1 foot above high water, 4 yards northwest of shore, 4 yards northeast of shore, and 6 yards southeast of foot of wooded slope to field 12 feet above high water. Cement monument marking reference station is 3.82 meters N 33° 52' W of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub projecting 2 inches above 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Bush" (N 83° 20' E).....	0	00	00	 ¼ mile.
Tangent of point.....	4	01	..	 ¼ mile.
Near peak of building.....	32	42	..	 1½ miles.
Tangent of foot of slope.....	56	33	..	 ¼ mile.
Right tree on point.....	120	06	..	 ¼ mile.
Tangent of woods.....	182	21	..	 ⅝ mile.
Nail in blaze in locust tree (6 inches diameter).....	202	15	50	 2.49 meters.
Nail in blaze in cedar tree (4 inches diameter).....	241	37	00	 5.47 meters.
REFERENCE STATION.....	242	48	00	 3.82 meters.
Nail in blaze in locust tree (7 inches diameter).....	244	46	50	 6.68 meters.

BUSH.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on north side of entrance to a small cove about ½ mile east of entrance to Granary Creek and ⅝ mile northwest of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land, about 7 feet above high water, 4 yards northeast of edge of bank, 9 yards northwest of point of curve of land, 22 yards west of tangent of land at tree, 30 yards west-northwest of scattering trees, and 50 yards northwest of a point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Nub" (S 83° 55' E).....	0	00	00	 ⅞-mile.
Tangent of point.....	46	27	..	 ¼ mile.
Largest cedar tree on point of high bank....	96	41	..	 ¼ mile.
Nail in blaze in locust tree (2 inches diameter).....	102	18	10	 3.81 meters.
Tangent of point.....	166	18	..	 ¼ mile.
Nail in blaze in hackberry tree (5 inches diameter).....	180	06	00	 8.65 meters.
Nail in blaze in walnut tree (10 inches diameter).....	348	25	20	 20.04 meters.

NUB.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on eastern side of entrance to a creek about ⅝ mile east of entrance to Granary Creek and ½ mile north of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 2 yards east of shore, 20 yards southwest of shore, 45 yards west of shore, 20 yards south of extreme end of point, and 16 yards north-northwest of woods. Cement monument marking reference station is 15.10 meters N 83° 01' E of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub set in 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Wheel" (S 4° 10' E).....	0	00	00	¼ mile.
Chimney on house.....	30	02	..	⅜ mile.
Largest cedar on point of high bank.....	47	16	..	⅜ mile.
Large oak tree.....	94	55	..	⅜ mile.
Large oak tree.....	143	43	..	⅜ mile.
Large oak tree.....	226	17	..	150 yards.
REFERENCE STATION.....	267	11	20	15.10 meters.
Nail in blaze in cedar tree (8 inches diameter).....	296	57	30	16.81 meters.
Nail in blaze in oak tree (5 inches diameter).....	333	04	40	19.64 meters.
Nail in blaze in oak tree (4 inches diameter).....	349	37	20	20.87 meters.

WHEEL.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on a point about $\frac{3}{8}$ mile southeast by east of entrance to Granary Creek and $\frac{1}{2}$ mile northwest of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh point south of woods about 1 foot above high water, 2 yards east of shore, 4 yards southeast of point at slight cut in marsh, and 40 yards north of square point of shore. Cement monument marking reference station is 5.26 meters S 86° 47' E of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub set in 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Pick" (S 12° 31' E).....	0	00	00	⅜ mile.
Left peak of building.....	0	04	..	⅜ mile.
Right tangent of woods.....	111	05	..	1 mile.
Large oak tree.....	129	21	..	½ mile.
Nail in blaze in oak tree (14 inches diameter).....	219	10	40	21.66 meters.
Nail in blaze in oak tree (9 inches diameter).....	230	46	50	18.74 meters.
Nail in blaze in cedar tree (6 inches diameter).....	262	26	00	19.26 meters.
REFERENCE STATION.....	285	44	00	5.26 meters.
Left peak of large building.....	299	31	..	¾ mile.
Chimney showing over fence.....	308	54	..	¾ mile.
Right peak of large barn.....	359	34	..	¾ mile.

PICK.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on western side of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 15 feet above high water, 25 yards southwest of edge of field at line of cedar trees, 22 yards west of gully, 40 yards south-southeast of a small clump of trees beyond small gully, and 300 yards east-southeast of fringe of cedar trees along edge of field northeast to east of gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Corner" (N 77° 40' W).....	0	00	00	¼ mile.
Nail in blaze in cherry tree (6 inches diameter).....	42	54	00	36.64 meters.
Left peak of barn.....	58	21	..	1¼ miles.

References—Continued.

	o	/	''	
Front peak of house.....	104	57	..	1½ miles.
Nail in blaze in cedar tree (6 inches diameter).....	110	11	50	27.24 meters.
Nail in blaze in cedar tree (6 inches diameter).....	134	46	00	26.37 meters.
Near peak of house.....	152	11	..	½ mile.
Nail in blaze in hackberry tree (5 inches diameter).....	169	37	50	23.00 meters.
Left peak of large barn.....	243	36	..	¼ mile.
Right peak of house.....	314	37	..	¼ mile.

CORNER.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south about ¼ mile west of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 15 feet above high water, 50 yards southwest of edge of bank, 55 yards south of gully, 70 yards north-northwest of trees in depression, and 120 yards west of point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Right" (N 20° 45' W).....	0	00	00	¼ mile.
Nail in blaze in large elm tree.....	16	18	00	50.41 meters.
Near peak of building.....	18	21	..	1 mile.
Nail in blaze in one of twin elm trees.....	63	58	40	47.11 meters.
Near peak of house.....	101	49	..	1¼ miles.
Left peak of house with two chimneys.....	113	02	..	1½ miles.
Nail in blaze in oak tree (14 inches diameter). 162	16	00	..	61.44 meters.
Near peak of large barn.....	238	11	..	¾ mile.
Right corner of large house.....	275	51	..	1½ miles.
Chimney on middle of large house.....	280	01	..	1 mile.

RIGHT.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on a point about ½ mile southeast of entrance to Granary Creek and ½ mile northwest of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in tree-fringed cultivated land about 15 feet above high water, 7 yards south of edge of bank, 9 yards from point of bank at path, 15 yards northwest of edge of bank, and 120 yards east of fence in depression.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Chew" (N 71° 45' W).....	0	00	00	½ mile.
Left chimney of long house in woods.....	33	06	..	1 mile.
Nail in blaze in cedar tree (8 inches diameter).....	76	18	00	8.25 meters.
Left one of two large chimneys showing over the trees.....	131	03	..	1 mile.
Left corner of building.....	168	32	..	1½ miles.
Nail in blaze in hickory tree (10 inches diameter).....	182	29	40	10.80 meters.
Nail in blaze in elm tree (10 inches diameter). 243	35	00	..	29.80 meters.
Right peak of house.....	269	37	..	¼ mile.
Windmill to right of two large cupolas.....	287	12	..	⅝ mile.

CHEW.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south about $\frac{3}{8}$ mile southeast of entrance to Granary Creek and $\frac{5}{8}$ mile west-northwest of entrance to Pickering Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 6 yards northeast of foot of bank 12 feet high, 12 yards west of point of shore, and 10 yards northwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Whale" (N $77^{\circ} 32'$ W).....	0	00	00	$\frac{1}{8}$ mile.
Large oak tree.....	72	58	..	$\frac{1}{4}$ mile.
Tangent of point.....	131	18	..	$\frac{3}{8}$ mile.
Left end of building.....	138	38	..	$\frac{1}{4}$ mile.
Near peak of building.....	175	22	..	$1\frac{1}{4}$ miles.
Near peak of large barn.....	179	07	..	1 mile.
Nail in blaze in cedar tree (10 inches diameter).....	284	33	00	18.19 meters.
Nail in blaze in cedar tree (6 inches diameter).....	348	47	10	9.57 meters.
Nail in blaze in cedar tree (5 inches diameter).....	358	58	20	21.82 meters.

WHALE.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on a point at western side of entrance to a small cove about $\frac{1}{4}$ mile south of entrance to Granary Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a sand-and-grass point about 2 feet above high water, 2 yards south-southeast of shore, 4 yards west-northwest of shore, 9 yards southwest of extreme point, and 7 yards east by north of foot of a terraced bank about 15 feet high.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Matter" (N $77^{\circ} 03'$ W).....	0	00	00	$\frac{1}{8}$ mile.
Near peak of larger barn.....	52	33	..	$\frac{3}{4}$ mile.
Large oak tree.....	115	39	..	$\frac{1}{4}$ mile.
Near corner of building.....	175	40	..	$1\frac{1}{4}$ miles.
Near peak of large barn.....	178	45	..	$1\frac{1}{2}$ miles.
Nail in blaze in cedar tree (10 inches diameter).....	286	06	30	9.40 meters.
Nail in blaze in cedar tree (7 inches diameter).....	309	33	10	5.50 meters.
Nail in blaze in cedar tree (5 inches diameter).....	315	23	40	9.49 meters.

MATTER.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south about $\frac{3}{8}$ mile east-southeast of entrance to Dividing Creek and $\frac{3}{8}$ mile west-southwest of entrance to Granary Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on small grassy point about 1 foot above high water, 3 yards south of shore and 2 yards north of foot of tree-fringed bank 5 feet high. Cement monument marking reference station is 8.58 meters S $0^{\circ} 32'$ E of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub set in 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Deck" (N 78° 05' W).....	0	00	00	200 yards.
Left tangent of wharf.....	62	43	..	1/4 mile.
Near peak of large barn on Pickerings Creek.	180	05	..	1 3/8 miles.
Nail in blaze in cedar tree (14 inches diameter).....	204	10	50	2.31 meters.
REFERENCE STATION.....	257	32	20	8.58 meters.
Nail in blaze in one of twin cedar trees (8 inches diameter).....	276	33	10	3.72 meters.
Nail in blaze in cedar tree (8 inches diameter).....	305	43	30	2.42 meters.

DECK.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on a point about 1/2 mile southeast of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is at edge of water bushes on a grass point about 1 foot above high water, 4 yards south of shore, 10 yards west of a round point, 20 yards east of shore, and 30 yards north of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Quarter" (S 38° 13' W).....	0	00	00	1/4 mile.
Chimney of house.....	43	11	..	1 1/4 miles.
Tangent of point of land.....	74	32	..	1/4 mile.
Left tangent of old wharf.....	149	46	..	400 yards.
South peak of large barn.....	170	41	..	3/4 mile.
Tangent of point of land.....	206	49	..	500 yards.
Left cedar tree on point.....	243	41	..	200 yards.

QUARTER.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south about 3/8 mile south-southeast of entrance to Dividing Creek and at east side of entrance to a cove. (See Chart No. 32.)

Immediate locality.—Observed station is on bank in a cultivated field about 12 feet above high water, 2 yards southeast of edge of bank, 100 yards south of trees and break in bluff, and 120 yards north of edge of bank at point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Nodim" (N 87° 45' W).....	0	00	00	1/2 mile.
Near peak of barn.....	1	18	..	1 1/8 miles.
Chimney outside near end of house.....	10	34	..	1 7/8 miles.
Near corner of barn.....	53	27	..	7/8 mile.
Right tangent of old wharf.....	112	25	..	3/8 mile.
Right peak of large barn.....	304	41	..	3/4 mile.
Baldwin windmill.....	317	20	..	7/8 mile.
Near peak of house.....	354	43	..	1 1/4 miles.

Survey of Oyster Bars, Queen Annes County, Md.

NODIM.

General locality.—Southeastern shore of the branch of Wye River bounding Wye Island on the south about $\frac{3}{8}$ mile southwest of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 4 feet above high water, 4 yards south of shore, 8 yards southeast of shore, 25 yards southwest of shore of marsh, and 13 yards south of corner of marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Gusta" (S 21° 08' W).....	0	00	00	 $\frac{1}{8}$ mile.
Near peak of house.....	42	04	..	 $1\frac{3}{8}$ miles.
Left peak of house.....	63	19	..	 1 mile.
Chimney outside left end of house.....	134	07	..	 $\frac{5}{8}$ mile.
Right corner of house.....	152	55	..	 $\frac{3}{4}$ mile.
Right tangent of wharf.....	220	29	..	 $\frac{3}{4}$ mile.
Baldwin windmill.....	354	18	..	 $\frac{5}{8}$ mile.

GUSTA.

General locality.—Southeastern shore of the branch of Wye River bounding Wye Island on the south about $\frac{7}{8}$ mile north-northeast of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 8 yards east of edge of bank, 12 yards southeast of edge of bank, 17 yards northeast of edge of bank, 35 yards north-northeast of a depression, and 65 yards southwest of end of cut in bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sylvia" (S 22° 57' W).....	0	00	00	 $\frac{3}{8}$ mile.
Left tangent of house on Bruffs Island.....	26	06	..	 2 miles.
Left chimney of house.....	45	15	..	 $1\frac{3}{8}$ miles.
Peak between two chimneys of house.....	51	42	..	 2 miles.
Right peak of house.....	80	53	..	 1 mile.
Cupola of barn.....	88	46	..	 $\frac{5}{8}$ mile.
Left corner of house.....	155	40	..	 $\frac{3}{4}$ mile.
Right peak of large barn.....	312	09	..	 $\frac{3}{8}$ mile.
Baldwin windmill.....	350	13	..	 $\frac{3}{8}$ mile.

SYLVIA.

General locality.—Southeastern shore of the branch of Wye River bounding Wye Island on the south on second prominent point north of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 11 yards east by south of edge of bluff, 22 yards northeast of lone locust tree 2 feet in diameter at the edge of the bank, and 400 yards northwest of a large barn.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Baldwins" (S 27° 13' W).....	0	00	00	 $\frac{1}{4}$ mile.
Nail in blaze in locust tree (24 inches diameter).....	24	12	20	 19.90 meters.
Very large lone tree.....	40	21	..	 22 yards.
Nail in blaze in locust tree (6 inches diameter).....	53	42	20	 13.37 meters.

References—Continued.

	"	/	"	
Left peak of barn.....	73	23	..	5/8 mile.
Cupola of building.....	106	19	..	5/8 mile.
Near peak of large house.....	156	37	..	1 mile.
Near peak of large barn.....	273	21	..	3/8 mile.
Baldwin windmill.....	334	37	..	1/4 mile.
Peak of near gable of Baldwin house.....	336	06	..	1/4 mile.
Spindle on cupola.....	336	51	..	1/4 mile.

BALDWINS.

General locality.—Southeastern shore of the branch of Wye River bounding Wye Island on the south on a point about 3/8 mile north of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a short, sharp point of marsh about 100 yards north of a yacht landing, 7 yards northeast of shore, 10 yards southeast of shore, 12 yards east of extreme end of point, and 8 yards west of foot of bank 8 feet high.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	0	/	"	
"Cousin" (S 25° 13' E).....	0	00	00	1/4 mile.
Flagstaff on yacht-landing house.....	11	27	..	100 yards.
Windmill.....	27	44	..	1 1/8 miles.
Left peak of bell cupola.....	27	55	..	1 1/8 miles.
Spindle on barn cupola.....	62	53	..	2 miles.
Front peak of boathouse on Bruffs Island.....	77	51	..	1 1/2 miles.
Near corner of left chimney of house.....	111	37	..	3/4 mile.
Near peak of barn with cupola.....	175	20	..	3/8 mile.
Near peak of barn.....	215	40	..	1 mile.
Nail in blaze in cedar tree (6 inches diameter).....	248	59	50	7.91 meters.
Nail in blaze in locust tree (5 inches diameter).....	311	47	20	5.36 meters.
Nail in blaze in locust tree (4 inches diameter).....	324	04	50	13.45 meters.

COUSIN.

General locality.—Southeastern shore of the branch of Wye River bounding Wye Island on the south about 1 1/2 miles east-northeast of north end of Bruffs Island and at northern side of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a pasture about 9 feet above high water, 25 yards east of edge of bank, 65 yards south-southeast of a small clump of trees in bottom land, 65 yards north of trees, 60 yards north of edge of a field, and 200 yards south of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	0	/	"	
"Lloyd" (S 36° 07' W).....	0	00	00	1/2 mile.
Spindle on barn cupola.....	8	04	50	2 miles.
Front peak of boathouse.....	26	05	..	1 1/2 miles.
Left peak of house.....	63	13	..	1 3/8 miles.
Chimney of house.....	91	31	..	3/4 mile.
Peak of near gable of Baldwin house.....	135	42	..	200 yards.
Windmill on large barn.....	187	08	..	1/4 mile.
Right peak of house.....	209	44	..	350 yards.
Left peak of bell cupola.....	333	34	..	1 mile.
Windmill.....	334	19	..	1 mile.

LLOYD.

General locality.—Southern shore of the branch of East Wye River bounding Wye Island on the south at western side of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 12 feet above high water, 70 yards southwest of edge of bank, 65 yards south of edge of bank, 65 yards north-northeast of point of woods and bottom land, and 120 yards northwest of an oak tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Edward" (N 84° 02' W).....	0	00	00	 ¾ mile.
Near peak of house.....	32	43	..	 1 mile.
Left peak of barn.....	52	18	..	 1 ½ miles.
Near peak of house.....	76	14	..	 ¾ mile.
Peak of near gable of Baldwin house.....	109	28	..	 ¾ mile.
Near peak of barn.....	122	59	..	 ¾ mile.
Right peak of large house.....	132	01	..	 1 mile.
Large oak tree.....	208	57	30	 120 yards.

EDWARD.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on a point at eastern side of entrance to Shaw Bay about ¾ mile east-northeast of north end of Bruffs Island and ¾ mile west of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 8 yards southeast of edge of a bluff which is washing away, and 30 yards southwest of a line of large trees at edge of bank and field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Colonel" (S 0° 10' W).....	0	00	00	 ½ mile.
Windmill.....	33	28	20	 1 ¼ miles.
Front peak of boathouse.....	64	02	..	 ¾ mile.
Peak between two chimneys of house.....	114	10	..	 1 ¾ miles.
Near peak of house.....	146	12	..	 ¾ mile.
Chimney of house.....	170	06	..	 1 ¼ miles.
Nail in blaze in walnut tree (13 inches diameter).....	201	56	40	 26.40 meters.
Nail in blaze in locust tree (4 inches diameter).....	216	09	10	 26.95 meters.
Nail in blaze in locust tree (10 inches diameter).....	235	55	40	 31.55 meters.
Windmill.....	309	41	00	 ¾ mile.

COLONEL.

General locality.—Southern shore of Shaw Bay on a point at entrance to a small cove about ½ mile from the branch of Wye River bounding Wye Island on the south and ¾ mile east of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is in a field about 10 feet above high water, 6 yards southeast of edge of bank which is washing away, 9 yards south-southwest of point of bank, and 3 yards west of top of bank lined with cedar, walnut, and oak trees. Cement monument marking reference station is 18.69 meters S 24° 06' E of observed station,

Marks.—Observed station is nail in center of 2-inch stub projecting 4 inches above 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	''	
"Shaw" (N 68° 12' W).....	0	00	00	¾ mile.
Peak of roof between two chimneys of house. 19 29 ..	19	29	..	1½ miles.
Near peak of house..... 48 21 ..	48	21	..	1½ miles.
Peak of near gable of house..... 100 57 ..	100	57	..	1¼ miles.
Nail in blaze in oak tree (20 inches diameter). 110 47 00	110	47	00	5.21 meters.
Nail in blaze in oak tree (6 inches diameter). 183 33 40	183	33	40	6.46 meters.
Nail in blaze in oak tree (7 inches diameter). 213 01 40	213	01	40	13.45 meters.
REFERENCE STATION..... 224 05 50	224	05	50	18.69 meters.
Near corner of house on Bruffs Island..... 355 07 ..	355	07	..	¾ mile.

SHAW.

General locality.—Southern shore of entrance to the branch of Wye River bounding Wye Island on the south on northern end of Bruffs Island about ⅜ mile southwest of Bordley Point. (See Chart No. 32.)

Immediate locality.—Observed station is in walnut, pine, and cedar woods, about 15 feet above high water, 7 yards southwest of edge of bank, and 100 yards north-northwest of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Won" (N 69° 43' W).....	0	00	00	½ mile.
Peak of house between two chimneys..... 39 56 ..	39	56	..	¾ mile.
Chimney on right end of house..... 77 44 ..	77	44	..	1¾ miles.
Near peak of large barn..... 88 54 ..	88	54	..	1½ miles.
Near peak of house..... 137 02 ..	137	02	..	1½ miles.
Chimney of house..... 174 08 ..	174	08	..	1¼ miles.
Right corner of left piazza post..... 234 04 10	234	04	10	100 yards.
Nail in blaze in walnut tree (28 inches diameter)..... 235 00 00	235	00	00	29.32 meters.
Nail in blaze in walnut tree (24 inches diameter)..... 268 35 20	268	35	20	24.30 meters.
Nail in blaze in walnut tree (15 inches diameter)..... 291 48 10	291	48	10	15.98 meters.

BRUFFS.

General locality.—Eastern shore of Wye River on northwest point of Bruffs Island about ⅜ mile northeast of Bennett Point and ½ mile southwest of Bordley Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 10 yards east of shore, 14 yards southwest of shore, 20 yards southeast of point of marsh, and 18 yards west of point of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Law" (S 2° 07' W).....	0	00	00	½ mile.
"St. Michaels P. E. Church Spire"..... 17 35 20	17	35	20	5¾ miles.
"St. Michaels Water Tank"..... 17 50 20	17	50	20	5¼ miles.
Cupola of barn..... 38 15 00	38	15	00	4½ miles.
Near peak of large barn..... 54 30 ..	54	30	..	3¾ miles.
Large walnut tree..... 118 55 ..	118	55	..	½ mile.
Peak between two chimneys of house..... 156 15 ..	156	15	..	¾ mile.
Near corner of house..... 184 29 ..	184	29	..	2½ miles.

Survey of Oyster Bars, Queen Annes County, Md.

References—Continued.

	°	'	"	
Right peak of house.....	208	24	..	7/8 mile.
Nail in blaze in tree (4 inches diameter).....	257	20	30	17.38 meters.
Nail in blaze in walnut tree (3 inches diameter).....	278	43	50	27.96 meters.
Nail in blaze in cedar tree (4 inches diameter).....	310	49	30	41.27 meters.
Smoke pipe of building in woods.....	314	28	..	200 yards.

LAW.

General locality.—Southeastern shore of Wye River about 3/4 mile east of Bennett Point and 1/8 mile southwest of south end of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 15 feet above high water, 8 yards southeast of edge of a bluff, 45 yards southwest of a wire fence, 100 yards northeast of a clump of trees, and 150 yards northwest of a black walnut tree at edge of field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"James" (S 36° 41' W).....	0	00	00	1/2 mile.
"Rich Neck Water Tower".....	47	20	10	4 3/4 miles.
Chimney of house on Tilghmans Point Farm.	57	48	..	3 3/4 miles.
Cupola of right barn.....	58	51	..	3 3/4 miles.
Near peak of large barn.....	128	41	..	1 1/4 miles.
Right corner of building in woods.....	169	31	..	3/8 mile.
Nail in blaze in cedar tree (4 inches diameter).....	182	21	50	38.67 meters.
Left peak of house.....	199	10	..	2 miles.
Nail in blaze in black walnut tree (7 inches diameter).....	206	30	30	45.23 meters.
Nail in blaze in cedar tree (4 inches diameter).....	224	46	40	59.96 meters.
Black walnut tree (18 inches diameter).....	284	14	..	150 yards.
Right corner of barn.....	297	53	..	1/4 mile.
Large cedar tree.....	338	23	..	100 yards.

JAMES.

General locality.—Eastern shore of Miles River at southern side of entrance to Wye River about 5/8 mile southwest of Bruffs Island and 5/8 mile southeast of Bennett Point. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 20 feet above high water, 17 yards east of edge of a bluff at shore, and 14 yards south of edge of a bluff 18 feet high with uniform slope to shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Frank" (S 3° 18' W).....	0	00	00	1/4 mile.
"St. Michaels P. E. Church Spire".....	15	09	00	4 1/2 miles.
"St. Michaels Water Tank".....	17	06	00	4 3/8 miles.
South chimney of house.....	63	16	..	4 miles.
South chimney of house on Tilghmans Point Farm.....	97	14	..	3 1/2 miles.
Right tangent of Tilghmans Point.....	109	08	..	3 1/4 miles.
Chimney of small cabin.....	174	03	..	1 3/8 miles.
West gable of barn.....	190	22	..	2 3/4 miles.
Cupola of barn.....	297	26	..	5/8 mile.

FRANK.

General locality.—Eastern shore of Miles River about $\frac{1}{2}$ mile south of entrance to Wye River and 1 mile northeast of Herring Island. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated field about 18 feet above high water, 8 yards east of a bluff washed by high water, and 125 yards south of a ditch. Cement monument marking reference station is 25.51 meters S $87^{\circ} 47'$ E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

		°	'	"	
"Wood" (S $12^{\circ} 55'$ E).....	0	00	00	.....	$\frac{1}{4}$ mile.
"St. Michaels P. E. Church Spire".....	32	13	00	.....	$4\frac{1}{4}$ miles.
"St. Michaels Water Tank".....	34	18	00	.....	$4\frac{1}{8}$ miles.
East gable of barn.....	59	33	..	.....	3 miles.
"Rich Neck Water Tank".....	105	14	00	.....	$3\frac{3}{8}$ miles.
South chimney of house on Tilghmans Point Farm.....	117	24	..	.....	$3\frac{1}{2}$ miles.
Right tangent of Tilghmans Point.....	129	22	..	.....	$3\frac{3}{4}$ miles.
South gable of small house.....	185	22	..	.....	$1\frac{1}{4}$ miles.
REFERENCE STATION.....	285	08	10	.....	25.51 meters.
Cupola on barn.....	289	06	..	.....	$\frac{3}{8}$ mile.
East chimney of house.....	335	53	..	.....	$1\frac{1}{8}$ miles.

WOOD.

General locality.—Eastern shore of Miles River about $1\frac{1}{2}$ miles southeast of Bennett Point, $1\frac{1}{4}$ miles east-northeast of Herring Island and $\frac{5}{8}$ mile north-northwest of entrance to Woodland Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 18 feet above high water, 18 yards east of shore and top of vertical bank 18 feet high, and 3 yards south of a wire fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

		°	'	"	
"Pearson" (N $65^{\circ} 24'$ W).....	0	00	00	.....	$3\frac{3}{4}$ miles.
Right tangent of Tilghmans Point.....	5	29	..	.....	$3\frac{1}{2}$ miles.
Left tangent of marsh on Bennett Point.....	36	49	..	.....	$1\frac{1}{8}$ miles.
West gable of barn.....	127	56	..	.....	$\frac{1}{2}$ mile.
"St. Michaels P. E. Church Spire".....	266	53	00	.....	4 miles.
"St. Michaels Water Tank".....	269	09	00	.....	$3\frac{3}{8}$ miles.
North chimney of house.....	321	42	..	.....	3 miles.
South chimney of house on Tilghmans Point Farm.....	353	51	..	.....	$3\frac{5}{8}$ miles.

HERR.

General locality.—In Miles River on Herring Island about $1\frac{1}{4}$ miles southwest of entrance to Wye River. (See Chart No. 32.)

Immediate locality.—Observed station is on sandy ground in the center of Herring Island about 2 feet above high water, 30 yards northeast of shore and 30 yards southwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Rich Neck Water Tank" (N 77° 26' W)....	0	00	00	 3 miles.
North chimney of house on Tilghmans Point				
Farm.....	16	28	..	 2½ miles.
Right tangent of Tilghmans Point.....	31	07	..	 2½ miles.
South gable of barn.....	81	37	..	 7 miles.
North chimney of small house.....	108	59	..	 2¾ miles.
Cupola of barn.....	149	17	..	 1½ miles.
North gable of barn.....	198	40	..	 1¾ miles.
East gable of barn.....	209	40	..	 3 miles.
Left chimney of Seth house.....	333	42	..	 2 miles.
North chimney of house.....	345	25	..	 2¾ miles.

OLLIE.

General locality.—Eastern shore of Miles River about 1 mile north of entrance to Leeds Creek and ¾ mile northeast of Deep Water Point. (See Chart No. 32.)

Immediate locality.—Observed station is in woods about 8 feet above high water, 6 yards west of edge of bank which is washing rapidly, and 8 yards northeast of large pine tree at edge of bank. Cement monument marking reference station is 14.42 meters N 74° 15' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe with top flush with surface of ground. Sub-surface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of the ground.

References.—

	°	'	''	
"Swing" (S 1° 20' W).....	0	00	00	 ¾ mile.
Nail in blaze in pine tree (3 feet diameter) ..	25	56	00	 7.62 meters.
"St. Michaels Water Tank".....	37	58	20	 2¾ miles.
Weather vane on house on Deep Water Point				
Farm.....	57	10	..	 1 mile.
Near peak of house.....	91	55	..	 1½ miles.
Chimney of house on Tilghmans Point Farm.....	130	38	..	 4½ miles.
Right tangent of Tilghmans Point.....	140	03	..	 4½ miles.
"Parsons Island Water Tank".....	157	19	40	 7¼ miles.
Left tangent of main woods on Bennett Point.....	172	00	..	 3 miles.
Chimney on right end of house in woods.....	180	00	..	 4 miles.
Nail in blaze in pine tree (8 inches diameter).....	240	27	..	 10.56 meters.
REFERENCE STATION.....	284	24	40	 14.42 meters.
Nail in blaze in pine tree (7 inches diameter).....	285	22	10	 10.55 meters.
Nail in blaze in pine tree (7 inches diameter).....	316	39	..	 12.52 meters.

DEEWAT.

General locality.—Western shore of Miles River on Deep Water Point, about ⅞ mile west-northwest of Fairview Point. (See Chart No. 32.)

Immediate locality.—Observed station is on sand and grass point about 2 feet above high water, 8 yards southwest of shore, 7 yards northwest of shore, and 10 yards west of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"St. Michaels Water Tank" (S 33° 08' W)....	0	00	00	 1½ miles.
Weather vane on Dodson house.....	53	13	..	 ¼ mile.
Tangent of Tilghmans Point.....	117	58	..	 4½ miles.
Right tangent of Parsons Island.....	133	28	..	 7½ miles.
Large square chimney of Starr house.....	179	59	..	 2½ miles.
Large chimney of house.....	212	08	..	 1½ miles.

References—Continued.

	°	'	"	
Cupola on Rieman house.....	271	59	..	1¼ miles.
Tangent of Long Point.....	287	02	..	3¼ miles.
Steeple.....	295	04	..	4½ to 5 miles.
Large chimney of house.....	297	41	..	2¾ miles.
Large chimney of house.....	309	30	..	2¾ miles.
"St. Michaels P. E. Church Spire".....	353	40	40	1½ miles.

SPAR.

General locality.—Southwestern shore of Miles River about 1 mile southeast of entrance to Hambleton Creek and ¾ mile northwest of Deep Water Point. (See Chart No. 32.)

Immediate locality.—Observed station is on cedar-and-locust-fringed shore about 4 feet above high water, 11 yards west of shore, 12 yards southwest of shore, and 15 yards south of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sara" (N 39° 19' W).....	0	00	00	1 mile.
Chimney of house on Tilghmans Point Farm.....	1	19	..	4 miles.
Near peak of barn beyond Herring Island... ..	42	38	..	8¾ miles.
Nail in blaze in oak tree (3 inches diameter).. ..	54	59	00	4.52 meters.
Right tangent of chimney.....	125	32	..	1¼ miles.
Tangent of Deep Water Point.....	181	22	..	¾ mile.
Nail in blaze in locust tree (3 inches diameter).....	240	08	40	6.84 meters.
Nail in blaze in locust tree (4 inches diameter).....	279	53	30	3.58 meters.

SARA.

General locality.—Southwestern shore of Miles River about 3¼ miles south-southeast of northern end of Tilghmans Point 1¼ miles southwest of Herring Island and on point at eastern side of entrance to Hambleton Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 15 feet above high water, 16 yards southwest of a bluff 12 feet high with uniform slope to shore, and 20 yards east of depression 4 feet deep.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Wood" (N 52° 14' E).....	0	00	00	2 miles.
West chimney of house.....	127	40	..	½ mile.
Nail in blaze in hackberry tree (12 inches diameter).....	158	58	50	22.02 meters.
Nail in blaze in cedar tree (12 inches diameter).....	204	12	50	12.66 meters.
Right tangent of Tilghmans Point.....	282	58	..	3¼ miles.
"Parsons Island Water Tank".....	297	11	00	6½ miles.
South gable of barn.....	315	40	..	8 miles.
South gable of house.....	323	03	..	6 miles.
South gable of barn.....	340	49	..	4 miles.

SETH.

General locality.—Southwestern shore of Miles River on a point about 2½ miles south of northern end of Tilghmans Point and ¾ mile northwest of entrance to Porters Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in clump of cedar trees about 12 feet above high water, 9 yards southwest of top of vertical bank, washed by high water, 50 yards northwest of extreme end of

point, and 400 yards northeast of a house. Cement monument marking reference station is 9.56 meters S $67^{\circ} 41'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 12 inches above surface of ground.

References.—

	°	'	"	
"Herr" (N $79^{\circ} 07'$ E).....	0	00	00	 2 miles.
Nail in blaze in cedar tree (12 inches diameter).....	145	20	20	 10.89 meters.
REFERENCE STATION.....	168	34	30	 9.56 meters.
Nail in blaze in cedar tree (6 inches diameter).....	219	59	45	 4.44 meters.
South gable of house.....	282	12	..	 $5\frac{1}{2}$ miles.
South gable of barn.....	305	34	..	 6 miles.
West gable of house.....	312	30	..	 6 miles.
Cupola on barn.....	356	52	..	 3 miles.

DIXON.

General locality.—Southeastern side of Eastern Bay on Tilghmans Point about halfway between Eastern Bay and Miles River, $\frac{3}{4}$ mile southwest of northern end of point, and $1\frac{1}{8}$ miles northeast of Claiborne Wharf. (See Chart No. 32.)

Immediate locality.—Observed station is on top of a 2-story square frame house on Tilghmans Point Farm.

Marks.—Observed station is center of upright staff, 3 inches square, set in the center of trap door at apex of square roof.

References.—None necessary.

PEARSON.

General locality.—Western shore of Miles River on Tilghmans Point about $\frac{3}{8}$ mile south-southeast of northern end of point. (See Chart No. 32.)

Immediate locality.—Observed station is on wooded bluff about 20 feet above high water, 5 yards west of top of vertical bank at shore, and 100 yards north of first point south of northern end of Tilghmans Point. Cement monument marking reference station is 12.66 meters N $86^{\circ} 03'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Green" (N $45^{\circ} 46'$ E).....	0	00	00	 $3\frac{3}{8}$ miles.
South gable of barn.....	1	14	..	 5 miles.
South chimney of house.....	11	48	..	 $3\frac{1}{2}$ miles.
West chimney of house.....	26	31	..	 $2\frac{7}{8}$ miles.
West gable of barn.....	62	31	..	 $3\frac{1}{2}$ miles.
East gable of barn.....	76	09	..	 4 miles.
West chimney of house.....	111	30	..	 $3\frac{1}{4}$ miles.
North chimney of house.....	125	20	..	 $3\frac{1}{8}$ miles.
Chimney of house.....	130	36	..	 $2\frac{1}{2}$ miles.
Nail in blaze in white oak tree (8 inches diameter).....	178	09	40	 5.31 meters.
REFERENCE STATION.....	228	11	00	 12.66 meters.
Nail in blaze in white oak tree (12 inches diameter).....	239	19	20	 9.99 meters.
South gable of house on Parsons Island.....	317	17	..	 $3\frac{1}{2}$ miles.
South gable of barn.....	350	02	..	 $4\frac{3}{8}$ miles.

BOUNDARIES OF OYSTER BARS.

EXPLANATION.

The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the designation and employment by the Department of Commerce and Labor of such officers, experts, and other technically qualified persons "as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland." The oyster laws of Maryland provide that the Maryland Shell Fish Commissioners, with the aid of such persons as may be designated by the Government, shall proceed "to have laid out, surveyed, and designated on the said charts the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts." The oyster laws of Maryland also provide in another section that there shall "be made a true and accurate survey of the natural oyster beds, bars, and rocks * * * with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey."

Under the provisions of the laws quoted above the State of Maryland, in cooperation with the Department of Commerce and Labor, must define the boundaries of the natural oyster bars "as accurately as practicable" and also "with reference to fixed and permanent objects on the shore, giving courses and distances." The requirement of "as accurately as practicable" is easily fulfilled by definition of the location of the corners of the oyster bars by latitude and longitude. In fact, this method is probably the most satisfactory and accurate one that could be used for all purposes of legal definition or for relocation of the oyster-bar boundaries by competent engineers. Therefore the additional requirement of "giving courses and distances" is superfluous and is only fulfilled in the published definitions on account of the specific provisions of the law making it compulsory. This part of the description of boundaries has involved an immense amount of extra computations in order to prevent technical discrepancies between the latitude and longitude of a corner of an oyster bar and its distance and bearing from objects on shore of known latitude and longitude without adding anything to the accuracy and very little to the convenience of practical use of the descriptions of the oyster-bar boundaries.

As provided by law the boundaries of the oyster bars are all straight lines, but in the work already completed they have inclosed areas of all shapes from triangles to complicated 14-sided figures, and of all sizes from 4 acres to 7,548 acres. The sides have varied in length from 93 to 7,529 yards, and in some cases the corners of the boundaries have been practically at the triangulation stations from which they are located, while in other instances they were over 13,600 yards from the landmarks most available for the purpose of fixing their position.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made and the magnitude of the work with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and great importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and the future.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in each county.

Title.—At the top of each tabular form is given the legal name of the oyster bar to be described, and the one by which it is known and designated in the published oyster records and on the oyster charts. The adopted name of the oyster bar is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the commission; and when there was no local name in common use a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the oyster bar was located.

Underneath the name, in parentheses, is given the general locality of the oyster bar and the serial number of the "Maryland Oyster Chart" on which its legal boundaries are shown.¹

First column.—This column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar. Where a corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars, only the number of the corner of the oyster bar being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the commission as the primary technical definition of the location of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"¹ and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"² gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars: One, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

(1) *Triangulation.*—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for

¹ The mean magnetic variation for Queen Annes County was 6° 15' west of north in 1911 and increasing at the rate of 5' yearly.

² Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic.*—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant, the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "Broad Creek" oyster bar, which is the first one described in this publication, and assume that "Corner No. 3," is to be examined as to its position. The angle between the two landmarks "Sandy Point Light" and "Ring" as determined from right to left from the forward bearings from this corner is $98^{\circ} 09'$ and the angle between "Ring" and "Railway Water Tank" is $71^{\circ} 08'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus

obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant then the other until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic location of a point is attained. In fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State fishery force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer can take compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,¹ and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks, for which the bearings are published, have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used. This can be done by getting their bearings directly from the chart by parallel rulers or a protractor and then applying these new bearings in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fifth column of the tables opposite the "corner" in question. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

¹The mean magnetic variation for Queen Annes County is 6° 15' west of north in 1911 and increasing at the rate of 5' yearly.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

BROAD CREEK.

(Chesapeake Bay—Chart No. 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 58 36.70	76 21 17.00	S 63 30 E	N 63 30 W	1,108	Wash.
			N 34 56 E	S 34 57 W	5,153	Ring.
			N 31 04 W	S 31 05 E	5,534	Sandy Point Light.
2	38 58 42.32	76 21 34.67	S 64 51 E	N 64 51 W	1,610	Wash.
			N 40 14 E	S 40 16 W	5,287	Ring.
			N 27 43 W	S 27 44 E	5,138	Sandy Point Light.
3	39 01 44.75	76 20 05.62	S 71 18 W	N 71 16 E	4,996	Sandy Point Light.
			S 26 51 E	N 26 51 W	2,373	Ring.
			N 82 01 E	S 82 02 W	2,439	Railway Water Tank.
4	39 01 39.96	76 19 43.20	S 74 51 W	N 74 49 E	5,514	Sandy Point Light.
			S 13 51 E	N 13 51 W	2,015	Ring.
			N 74 40 E	S 74 41 W	1,892	Railway Water Tank.
5	38 59 38.62	76 19 57.54	N 21 55 E	S 21 55 W	2,303	Ring.
			N 61 48 W	S 61 50 E	5,610	Sandy Point Light.
			S 23 04 W	N 23 04 E	2,807	Wash.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

LOVE POINT.

(Chesapeake Bay off Love Point—Chart No. 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 02 07.35	76 19 30.60	S 74 10 E N 85 49 E N 56 12 E	N 74 09 W S 85 50 W S 56 14 W	1,552 2,303 4,745	Railway Water Tank. Amour. Love Point Light.
2	39 02 10.90	76 19 54.10	S 75 35 E N 89 03 E N 61 05 E	N 75 34 W S 89 04 W S 61 07 W	2,180 2,916 5,211	Railway Water Tank. Amour. Love Point Light.
3	39 03 33.70	76 19 32.30	S 24 45 E S 40 28 E S 86 05 E	N 24 45 W N 40 28 W N 86 04 W	3,674 3,608 3,998	Railway Water Tank. Amour. Love Point Light.
4	39 03 18.65	76 18 33.10	S 0 23 W S 19 19 E N 84 30 E	N 0 23 E N 19 19 W S 84 31 W	2,827 2,370 2,443	Railway Water Tank. Amour. Love Point Light.
5	39 04 15.35	76 16 34.41	S 31 33 E N 25 49 E N 1 56 W	N 31 31 W S 25 50 W S 1 56 E	6,057 6,240 8,703	Wickes Beach. Stevens. Swan Point 3.
Thence along county boundary as delineated on Chart No. 29 to corner No. 6.						
6	39 03 53.27	76 16 11.63	S 30 11 E N 18 25 E N 5 24 W	N 30 10 W S 18 26 W S 5 24 E	5,112 6,705 9,485	Wickes Beach. Stevens. Swan Point 3.
7	39 02 55.16	76 17 18.66	S 44 10 W S 60 26 E N 24 48 E	N 44 11 E N 60 24 W S 24 49 W	2,838 4,981 1,131	Railway Water Tank. Wickes Beach. Love Point Light.

STRONG BAY.

(Lower Chester River—Chart No. 29.)

1	39 00 55.40	76 17 09.16	S 3 37 E N 68 50 E N 2 32 E	N 3 37 W S 68 52 W S 2 32 W	2,853 4,379 5,070	Macum. Wickes Beach. Love Point Light.
2	39 01 52.82	76 18 04.90	S 86 08 E N 28 23 E N 85 01 W	N 86 06 W S 28 23 W S 85 01 E	5,561 3,556 764	Wickes Beach. Love Point Light. Railway Water Tank.
3	39 01 59.81	76 17 58.12	N 27 36 E N 17 50 W S 79 47 W	S 27 36 W S 17 50 E N 79 47 E	3,264 443 955	Love Point Light. Amour. Railway Water Tank.
4	39 01 14.60	76 16 49.55	S 5 30 W N 75 20 E N 63 42 W	N 5 29 E S 75 22 W S 63 43 E	3,512 3,688 3,060	Macum. Wickes Beach. Railway Water Tank.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CARVEL.

(Lower Chester River—Chart No. 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
1	38 59 41.98	76 16 57.80	S 70 07 E N 43 01 E N 18 46 W	N 70 05 W S 43 02 W S 18 46 E	5,378 5,548 5,354	Muddy. Wickes Beach. Amour.
2	39 00 21.36	76 17 27.50	S 21 18 E N 59 08 E N 14 07 W	N 21 18 W S 59 10 W S 14 07 E	1,824 5,310 3,858	Macum. Wickes Beach. Amour.
3	38 59 48.72	76 16 28.53	S 64 22 E N 38 13 E N 27 14 W	N 64 20 W S 38 14 W S 27 15 E	4,755 4,873 5,446	Muddy. Wickes Beach. Amour.

FERRY (QUEEN ANNES COUNTY).

(Lower Chester River—Chart No. 29.)

1	38 59 23.94	76 15 34.62	S 66 55 E N 59 33 E N 18 53 E	N 66 54 W S 59 35 W S 18 54 W	3,118 4,695 4,930	Muddy. Narrows Point. Wickes Beach.
2	39 00 09.66	76 15 58.46	S 52 10 W S 51 40 E N 35 27 E	N 52 10 E N 51 41 W S 35 28 W	2,128 4,455 3,833	Macum. Muddy. Wickes Beach.
3	39 00 29.37	76 15 30.72	S 38 53 E N 87 30 E N 31 17 E	N 38 52 W S 87 32 W S 31 18 W	4,405 3,949 2,876	Muddy. Narrows Point. Wickes Beach.
4	39 00 04.45	76 14 38.00	Thence along county boundary as delineated on Chart No. 29			to corner No. 4.
			S 28 01 E N 68 25 E N 1 51 E	N 28 00 W S 68 26 W S 1 51 W	2,932 2,750 3,299	Muddy. Narrows Point. Wickes Beach.
5	38 59 49.10	76 14 48.41	S 38 34 E N 61 37 E N 5 42 E	N 38 33 W S 61 38 W S 5 42 W	2,649 3,218 3,834	Muddy. Narrows Point. Wickes Beach.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

LONG POINT (CHESTER RIVER).

(Lower Chester River—Charts Nos. 29 and 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 59 03.26	76 13 15.32	N 84 48 E	S 84 49 W	3,528	Bluebeard.
			N 7 05 E	S 7 05 W	3,099	Narrows Point.
			S 56 42 W	N 56 41 E	956	Muddy.
2	38 59 28.93	76 14 37.13	S 44 14 E	N 44 14 W	1,941	Muddy.
			N 48 55 E	S 48 56 W	3,363	Narrows Point.
			N 1 04 E	S 1 04 W	4,497	Wickes Beach.
3	38 59 49.10	76 14 48.41	S 38 34 E	N 38 33 W	2,649	Muddy.
			N 61 37 E	S 61 38 W	3,218	Narrows Point.
			N 5 42 E	S 5 42 W	3,834	Wickes Beach.
4	39 00 04.45	76 14 38.00	S 28 01 E	N 28 00 W	2,932	Muddy.
			N 68 25 E	S 68 26 W	2,750	Narrows Point.
			N 1 51 E	S 1 51 W	3,299	Wickes Beach.
5	38 59 21.24	76 13 13.75	S 36 36 W	N 36 36 E	1,410	Muddy.
			S 85 17 E	N 85 16 W	3,484	Bluebeard.
			N 7 51 E	S 7 52 W	2,492	Narrows Point.

FLOOD POINT.

(Chester River Entrance Kent Island Narrows—Chart No. 29.)

1	38 58 37.28	76 14 44.20	S 20 44 W	N 20 44 E	862	Bridge.
			N 77 07 E	S 77 07 W	1,581	Muddy.
			N 17 46 E	S 17 46 W	420	Thin.
2	38 58 42.52	76 14 47.62	S 12 20 W	N 12 20 E	1,005	Bridge.
			N 83 50 E	S 83 51 W	1,640	Muddy.
			N 44 21 E	S 44 21 W	312	Thin.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 58 48.66	76 14 37.20	S 22 22 W	N 22 21 E	1,286	Bridge.
			S 13 16 E	N 13 16 W	1,641	Railroad.
			S 88 41 E	N 88 41 W	1,357	Muddy.
4	38 58 46.95	76 14 30.61	S 30 21 W	N 30 21 E	1,311	Bridge.
			S 7 32 E	N 7 32 W	1,557	Railroad.
			N 88 43 E	S 88 43 W	1,184	Muddy.
5	38 58 39.02	76 14 35.72	S 31 26 W	N 31 26 E	1,013	Bridge.
			N 77 25 E	S 77 26 W	1,351	Muddy.
			N 15 34 W	S 15 34 E	354	Thin.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

KENT ISLAND NARROWS.

(Kent Island Narrows—Chart No. 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 58 11.04	76 14 47.80	S 23 36 E S 63 09 E N 9 51 E	N 23 36 W N 63 08 W S 9 51 W	1,789 736 1,304	Marshy. Railroad. Thin.
2	38 58 13.40	76 14 55.78	S 8 41 W S 64 34 E N 19 46 E	N 8 41 E N 64 34 W S 19 46 W	1,932 960 1,281	Kirwan. Railroad. Thin.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 58 42.52	76 14 47.62	S 12 20 W N 83 50 E N 44 21 E	N 12 20 E S 83 51 W S 44 21 W	1,005 1,640 312	Bridge. Muddy. Thin.
4	38 58 37.28	76 14 44.20	S 20 44 W N 77 07 E N 17 46 E	N 20 44 E S 77 07 W S 17 46 W	862 1,581 420	Bridge. Muddy. Thin.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						

BLUNT.

(Lower Chester River—Chart No. 30.)

1	38 58 22.34	76 12 41.74	N 57 08 E N 6 25 W N 63 04 W	S 57 09 W S 6 26 E S 63 05 E	3,131 4,484 1,888	Bluebeard. Narrows Point. Muddy.
2	38 58 43.78	76 12 55.80	N 71 59 E N 2 01 W N 84 16 W	S 72 00 W S 2 01 E S 84 16 E	3,155 3,735 1,320	Bluebeard. Narrows Point. Muddy.
3	38 59 33.65	76 11 51.36	S 61 35 E N 3 00 W N 41 42 W	N 61 34 W S 3 00 E S 41 43 E	1,483 2,334 2,747	Bluebeard. Rain. Narrows Point.
4	38 59 31.02	76 11 24.58	N 13 33 W N 49 48 W S 68 29 W	S 13 33 E S 49 49 E N 68 28 E	2,489 3,315 3,983	Rain. Narrows Point. Muddy.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

POPLAR.

(Lower Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° / //	° / //	Yards.	
1	38 59 42.84	76 10 51.55	N 55 18 E N 35 42 W S 14 54 W	S 55 18 W S 35 42 E N 14 54 E	2,063 2,489 1,051	Blakeford. Rain. Bluebeard.
2	38 59 48.93	76 11 00.88	S 1 10 W N 63 28 E N 33 36 W	N 1 10 W S 63 29 W S 33 37 E	1,221 2,170 2,180	Bluebeard. Blakeford. Rain.
3	39 00 14.45	76 10 34.15	N 63 26 W S 19 17 W N 85 00 E	S 63 27 E N 19 17 E S 85 01 W	2,135 2,205 1,242	Rain. Bluebeard. Blakeford.
4	39 00 07.93	76 10 25.43	S 27 14 W N 71 58 E N 1 34 W	N 27 13 E S 71 59 W S 1 34 E	2,093 1,060 2,846	Bluebeard. Blakeford. Break.

CARPENTER ISLAND.

(Middle Chester River—Chart No. 30.)

1	39 00 33.76	76 10 47.00	S 70 59 E N 13 56 E N 79 04 W	N 70 59 W S 13 56 W S 79 05 E	1,667 2,033 1,600	Blakeford. Break. Rain.
2	39 01 12.05	76 11 10.98	N 51 13 W S 43 37 W S 50 16 E	S 51 14 E N 43 37 E N 50 15 W	2,489 1,365 2,869	Overton. Rain. Blakeford.
3	39 01 08.78	76 10 30.30	N 3 37 E S 66 26 W S 33 23 E	S 3 37 W N 66 25 E N 33 23 W	794 2,194 2,065	Break. Rain. Blakeford.
4	39 01 07.33	76 10 11.84	N 27 23 W S 71 39 W S 21 13 E	S 27 23 E N 71 38 E N 21 13 W	947 2,630 1,797	Break. Rain. Blakeford.
5	39 00 36.84	76 10 02.42	N 20 05 W N 85 50 W S 31 54 E	S 20 05 E S 85 51 E N 31 54 W	1,990 2,752 762	Break. Rain. Blakeford.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HORSE RACE.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 01 08.78	76 10 30.30	N 3 37 E S 66 26 W S 33 23 E	S 3 37 W N 66 25 E N 33 23 W	794 2,194 2,065	Break. Rain. Blakeford.
2	39 01 12.05	76 11 10.98	N 51 13 W S 43 37 W S 50 16 E	S 51 14 E N 43 37 E N 50 15 W	2,489 1,365 2,869	Overton. Rain. Blakeford.
3	39 02 00.00	76 11 41.20	S 63 58 E N 32 18 E S 87 04 W	N 63 58 W S 32 18 W N 87 04 E	2,131 1,808 1,147	Break. Fir. Overton.
4	39 02 17.46	76 11 06.57	N 3 22 E S 72 32 W S 33 23 E	S 3 22 W N 72 33 E N 33 22 W	942 2,155 1,825	Fir. Overton. Break.
5	39 01 31.43	76 10 30.47	N 73 14 W S 59 43 W S 24 38 E	S 73 15 E N 59 43 E N 24 38 W	3,139 2,592 2,736	Overton. Rain. Blakeford.

PINEY POINT (QUEEN ANNES COUNTY).

(Middle Chester River—Chart No. 30.)

1	39 02 00.00	76 11 41.20	S 63 58 E N 32 18 E S 87 04 W	N 63 58 W S 32 18 W N 87 04 E	2,131 1,808 1,147	Break. Fir. Overton.
Thence along county boundary as delineated by Chart No. 30 to Corner No. 2.						
2	39 03 18.25	76 11 43.76	S 21 47 W S 42 56 E N 81 22 E	N 21 46 E N 42 56 W S 81 23 W	2,905 1,517 1,697	Overton. Fir. Gordon.
3	39 02 59.93	76 11 14.07	S 27 08 E N 45 49 E N 65 12 W	N 27 08 W S 45 49 W S 65 12 E	555 1,251 2,234	Fir. Gordon. Bay Bush Point.
4	39 02 41.86	76 11 25.76	S 32 45 E N 78 14 E N 39 07 E	N 32 44 W S 78 14 W S 39 07 W	2,790 572 1,914	Break. Fir. Gordon.
5	39 02 17.46	76 11 06.57	N 3 22 E S 72 32 W S 33 23 E	S 3 22 W N 72 33 E N 33 22 W	942 2,155 1,825	Fir. Overton. Break.

BOUNDARIES OF NATURAL, OYSTER BARS—continued.

HELLS DELIGHT.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 02 59.93	76 11 14.07	S 27 08 E N 45 49 E N 65 12 W	N 27 08 W S 45 49 W S 65 12 E	555 1,251 2,234	Fir. Gordon. Bay Bush Point.
2	39 03 18.25	76 11 43.76	S 21 47 W S 42 56 E N 81 22 E	N 21 46 E N 42 56 W S 81 23 W	2,905 1,517 1,697	Overton. Fir. Gordon.
3	39 04 10.82	76 10 59.06	S 18 20 E S 76 40 E N 68 41 E	N 18 19 W N 76 39 W S 68 42 W	1,599 2,359 3,309	Gordon. Reeds. Holton Point.
4	39 04 02.56	76 10 33.54	S 7 44 W S 80 43 E N 58 26 E	N 7 44 E N 80 42 W S 58 27 W	1,251 1,646 2,830	Gordon. Reeds. Holton Point.

REEDS.

(Reed's Creek—Chart No. 30.)

1	39 03 30.37	76 09 42.66	N 19 17 E N 48 32 W S 31 00 W	S 19 17 W S 48 32 E N 31 00 E	868 636 105	Reeds. Bird. Grove.
2	39 03 36.60	76 09 49.85	S 24 16 E N 37 58 E N 53 45 W	N 24 16 W S 37 58 W S 53 44 E	328 773 357	Grove. Reeds. Bird.
3	39 03 38.95	76 09 34.61	N 8 04 E N 79 09 W S 35 01 W	S 8 04 W S 79 10 E N 35 01 E	536 701 463	Reeds. Bird. Grove.

ROBINS COVE.

(Middle Chester River—Chart No. 30.)

1	39 04 17.42	76 09 38.05	S 27 09 W S 22 11 E N 44 12 E	N 27 09 E N 22 11 W S 44 12 W	1,310 784 1,367	Bird. Reeds. Holton Point.
2	39 04 20.62	76 09 44.92	S 18 09 W S 21 36 E N 52 26 E	N 18 08 E N 21 36 W S 52 27 W	1,340 941 1,429	Bird. Reeds. Holton Point.
3	39 04 36.15	76 09 34.31	S 21 11 W S 2 45 E N 67 50 E	N 21 10 E N 2 45 W S 67 51 W	1,927 1,400 923	Bird. Reeds. Holton Point.
4	39 04 33.58	76 09 28.20	S 26 37 W S 4 04 W N 57 56 E	N 26 36 E N 4 04 E S 57 56 W	1,913 1,310 819	Bird. Reeds. Holton Point.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

OLD FIELD.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	39 03 55.67	76 10 11.82	S 36 17 W S 88 11 E N 47 03 E	N 36 16 E N 88 11 W S 47 04 W	1,250 1,054 2,514	Gordon. Reeds. Holton Point.
2	39 04 02.56	76 10 33.54	S 7 44 W S 80 43 E N 58 26 E	N 7 44 E N 80 42 W S 58 27 W	1,251 1,646 2,830	Gordon. Reeds. Holton Point.
3	39 04 10.82	76 10 59.06	S 18 20 E S 76 40 E N 68 41 E	N 18 19 W N 76 39 W S 68 42 W	1,599 2,359 3,309	Gordon. Reeds. Holton Point.
4	39 05 00.50	76 10 15.60	S 27 27 E S 76 18 E N 63 30 E	N 27 26 W N 76 17 W S 63 31 W	2,501 1,997 2,750	Reeds. Holton Point. Spaniard Point 2, Upper.
5	39 05 32.73	76 09 29.24	S 24 49 E S 69 30 E N 83 33 E	N 24 48 W N 69 30 W S 83 33 W	1,719 1,407 1,251	Holton Point. Corsica. Spaniard Point 2, Upper.
6	39 05 23.33	76 09 16.60	S 17 23 E S 79 54 E N 63 20 E	N 17 23 W N 79 53 W S 63 20 W	1,302 1,002 1,019	Holton Point. Corsica. Spaniard Point 2, Upper.
7	39 05 08.76	76 09 33.12	S 47 36 E N 77 28 E N 54 48 E	N 47 36 W S 77 29 W S 54 48 W	1,114 1,456 1,646	Holton Point. Corsica. Spaniard Point 2, Upper.

HOLTON POINT.

(Entrance Corsica River—Chart No. 30.)

1	39 04 46.68	76 08 44.98	N 88 01 E N 8 19 E S 89 05 W	S 88 01 W S 8 19 W N 89 05 E	567 1,072 442	Earle. Corsica. Holton Point.
2	39 05 08.76	76 09 33.12	S 47 36 E N 77 28 E N 54 48 E	N 47 36 W S 77 29 W S 54 48 W	1,114 1,456 1,646	Holton Point. Corsica. Spaniard Point 2, Upper.
3	39 05 23.33	76 09 16.60	S 17 23 E S 79 54 E N 63 20 E	N 17 23 W N 79 53 W S 63 20 W	1,302 1,002 1,019	Holton Point. Corsica. Spaniard Point 2, Upper.
4	39 05 13.48	76 09 07.72	S 9 42 E N 78 15 E N 40 30 E	N 9 42 W S 78 16 W S 40 30 W	924 769 1,043	Holton Point. Corsica. Spaniard Point 2, Upper.
5	39 05 06.92	76 08 41.24	S 38 05 W S 35 12 E S 80 26 E	N 38 05 E N 35 12 W N 80 26 W	876 812 779	Holton Point. Earle. Swepson.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

TOWN POINT.

(Corsica River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 04 40.98	76 07 56.52	N 24 25 E	S 24 25 W	805	Engineer.
			N 28 39 W	S 28 39 E	850	Swepson.
			N 73 21 W	S 73 21 E	739	Earle.
2	39 04 56.98	76 08 20.33	S 71 59 W	N 71 59 E	1,146	Holton Point.
			S 14 03 W	N 14 03 E	338	Earle.
			S 47 23 E	N 47 23 W	1,118	Hydrographic.
3	39 04 46.68	76 08 44.98	N 88 01 E	S 88 01 W	567	Earle.
			N 8 19 E	S 8 19 W	1,072	Corsica.
			S 89 05 W	N 89 05 E	442	Holton Point.
4	39 05 06.92	76 08 41.24	S 38 05 W	N 38 05 E	876	Holton Point.
			S 35 12 E	N 35 12 W	812	Earle.
			S 80 26 E	N 80 26 W	779	Swepson.
5	39 04 56.57	76 07 59.97	N 55 15 W	S 55 15 E	385	Swepson.
			S 63 02 W	N 63 02 E	692	Earle.
			S 21 09 E	N 21 09 W	796	Hydrographic.

EMORY WHARF.

(Corsica River—Chart No. 30.)

1	39 04 40.98	76 07 56.52	N 24 25 E	S 24 25 W	805	Engineer.
			N 28 39 W	S 28 39 E	850	Swepson.
			N 73 21 W	S 73 21 E	739	Earle.
2	39 04 56.57	76 07 59.97	N 55 15 W	S 55 15 E	385	Swepson.
			S 63 02 W	N 63 02 E	692	Earle.
			S 21 09 E	N 21 09 W	796	Hydrographic.
3	39 04 49.41	76 07 31.24	N 36 29 W	S 36 29 E	558	Engineer.
			S 43 01 W	N 43 01 E	686	Hydrographic.
			S 23 45 E	N 23 45 W	657	Ruth.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

EARLE COVE.

(Corsica River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	39 04 29.18	76 08 04.65	N 66 14 E N 9 36 W N 28 44 W	S 66 14 W S 9 36 E S 28 45 E	448 1,159 1,882	Hydrographic. Swepson. Corsica.
2	39 04 33.48	76 08 09.74	N 86 14 E N 3 25 W N 27 04 W	S 86 15 W S 3 25 E S 27 05 E	545 1,001 1,694	Hydrographic. Swepson. Corsica.
3	39 04 37.95	76 08 01.72	N 29 21 E N 17 42 W N 61 12 W	S 29 21 W S 17 42 E S 61 12 E	958 889 652	Engineer. Swepson. Earle.
4	39 04 32.82	76 07 58.16	N 20 27 E N 19 38 W N 53 47 W	S 20 27 W S 19 38 E S 53 47 E	1,075 1,084 823	Engineer. Swepson. Earle.
Thence from corner No. 4 along the mean low water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide						

SHIP POINT.

(Corsica River—Chart No. 30.)

1	39 04 47.45	76 07 10.09	S 66 58 W S 28 32 W N 89 25 E	N 66 57 E N 28 32 E S 89 25 W	1,112 610 662	Hydrographic. Ruth. Bath.
2	39 04 48.55	76 07 19.82	S 58 24 W S 3 33 W S 87 44 E	N 58 24 E N 3 33 E N 87 43 W	902 573 919	Hydrographic. Ruth. Bath.
3	39 04 52.90	76 07 19.08	S 51 50 W S 4 22 W S 78 29 E	N 51 49 E N 4 22 E N 78 28 W	1,002 722 918	Hydrographic. Ruth. Bath.
4	39 04 51.25	76 07 10.08	S 61 11 W S 23 43 W S 79 06 E	N 61 10 E N 23 43 E N 79 05 W	1,169 725 674	Hydrographic. Ruth. Bath.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

POSSUM POINT.

(Corsica River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 04 46.63	76 06 54.57	S 14 07 W N 83 38 E N 32 46 W	N 14 07 E S 83 38 W S 32 46 E	705 256 232	Melfield. Bath. Ship.
2	39 04 50.64	76 06 57.25	S 68 15 W S 44 21 W S 71 46 E	N 68 15 E N 44 21 E N 71 45 W	1,465 900 341	Hydrographic. Ruth. Bath.
3	39 04 57.82	76 06 44.53	S 65 09 W S 47 25 W S 1 38 W	N 65 09 E N 47 24 E S 1 38 E	1,869 1,308 348	Hydrographic. Ruth. Bath.
4	39 04 56.40	76 06 39.66	S 67 59 W S 52 30 W S 24 37 W	N 67 59 E N 52 29 E N 24 37 E	1,967 1,376 331	Hydrographic. Ruth. Bath.

SPANIARD POINT.

(Middle Chester River—Chart No. 30.)

i	39 05 23.33	76 09 16.60	S 17 23 E S 79 54 E N 63 20 E	N 17 23 W N 79 53 W S 63 20 W	1,302 1,002 1,019	Holton Point. Corsica. Spaniard Point 2, Upper.
2	39 05 32.73	76 09 29.24	S 24 49 E S 69 30 E N 83 33 E	N 24 48 W N 69 30 W S 83 33 W	1,719 1,407 1,251	Holton Point. Corsica. Spaniard Point 2, Upper.
3	39 05 53.20	76 09 05.65	S 30 33 E S 48 35 E N 32 20 E	N 30 34 W N 48 35 W S 32 20 W	1,374 831 1,067	Corsica. Spaniard Point 2, Upper. Brown.
4	39 06 05.75	76 08 16.82	S 67 57 E N 62 55 E N 56 06 W	N 67 56 W S 62 56 W S 56 07 E	1,554 1,988 857	Chester. Deep Point 2. Brown.
5	39 06 00.63	76 08 14.36	S 73 22 E N 57 43 E N 50 02 W	N 73 21 W S 57 43 W S 50 02 E	1,436 2,017 1,014	Chester. Deep Point 2. Brown.
6	39 05 46.26	76 08 49.00	S 30 27 E N 73 03 E N 6 41 E	N 30 27 W S 73 04 W S 6 41 W	366 1,025 1,144	Spaniard Point 2, Upper. Evans. Brown.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

EMORY HOLLOW.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 05 56.60	76 08 04.60	S 76 11 E N 50 03 E N 52 42 W	N 76 11 W S 50 04 W S 52 43 E	1,153 1,890 1,299	Chester. Deep Point 2. Brown.
2	39 06 00.63	76 08 14.36	S 73 22 E N 57 43 E N 50 02 W	N 73 21 W S 57 43 W S 50 02 E	1,436 2,017 1,014	Chester. Deep Point 2. Brown.
3	39 06 05.75	76 08 16.82	S 67 57 E N 62 55 E N 56 06 W	N 67 56 W S 62 56 W S 56 07 E	1,554 1,988 857	Chester. Deep Point 2. Brown.
4	39 06 23.28	76 07 08.81	S 16 26 W S 84 36 E N 3 04 W	N 16 26 E N 84 35 W S 3 04 E	1,225 576 314	Chester. Corpse. Deep Point 2.
5	39 06 18.51	76 07 03.33	S 25 49 W N 76 05 E N 18 43 W	N 25 49 E S 76 05 W S 18 43 E	1,126 443 502	Chester. Corpse. Deep Point 2.
6	39 05 58.62	76 07 29.60	S 83 54 W S 30 11 E N 55 15 E	N 83 54 E N 30 11 W S 55 15 W	1,112 397 1,364	Evans. Chester. Corpse.

SHEEP (QUEEN ANNES COUNTY).

(Middle Chester River—Chart No. 30.)

1	39 06 18.51	76 07 03.33	S 25 49 W N 76 05 E N 18 43 W	N 25 49 E S 76 05 W S 18 43 E	1,126 443 502	Chester. Corpse. Deep Point 2.
2	39 06 23.28	76 07 08.81	S 16 26 W S 84 36 E N 3 04 W	N 16 26 E N 84 36 W S 3 04 E	1,225 576 314	Chester. Corpse. Deep Point 2.
3	39 06 34.74	76 06 47.60	S 2 09 E N 59 13 E N 14 19 E	N 2 09 W S 59 13 W S 14 20 W	441 794 900	Corpse. Indian. Thorn.
4	39 06 32.37	76 06 45.00	N 51 37 E N 9 12 E N 89 20 W	S 51 37 W S 9 13 W S 89 21 E	783 965 643	Indian. Thorn. Deep Point 2.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MUMMYS COVE.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 06 47.25	76 06 28.65	S 65 15 W	N 65 14 E	1,180	Deep Point 2.
			N 31 29 W	S 31 29 E	527	Thorn.
			N 16 47 E	S 16 47 W	1,141	Shippen.
2	39 06 50.40	76 06 32.73	S 58 06 W	N 58 05 E	1,136	Deep Point 2.
			N 26 06 W	S 26 06 E	383	Thorn.
			N 23 54 E	S 23 54 W	1,077	Shippen.
3	39 07 04.97	76 06 16.27	N 79 53 E	S 79 54 W	538	Ashland.
			N 0 27 E	S 0 27 W	494	Shippen.
			S 76 09 W	N 76 09 E	619	Thorn.
4	39 06 59.70	76 06 10.52	N 54 17 E	S 54 17 W	466	Ashland.
			N 12 22 W	S 12 22 E	688	Shippen.
			N 87 44 W	S 87 45 E	752	Thorn.

HOLLYDAY (QUEEN ANNES COUNTY).

(Middle Chester River—Chart No. 30.)

1	39 07 39.14	76 05 20.98	S 26 23 W	N 26 23 E	322	Burns.
			N 81 18 E	S 81 18 W	548	Starkley.
			N 27 27 E	S 27 27 W	911	Jarrett.
2	39 07 45.52	76 05 27.55	S 3 23 E	N 3 23 W	504	Burns.
			S 79 31 E	N 79 31 W	726	Starkley.
			N 44 58 E	S 44 59 W	839	Jarrett.
3	39 07 53.80	76 05 00.86	N 89 29 E	S 89 30 W	1,051	Booker.
			N 19 07 W	S 19 07 E	333	Jarrett.
			S 84 25 W	N 84 25 E	1,159	Oyster.
4	39 07 50.40	76 05 00.81	N 83 16 E	S 83 16 W	1,058	Booker.
			N 14 25 W	S 14 25 E	442	Jarrett.
			N 89 54 W	S 89 54 E	1,155	Oyster.

BOOKER WHARF.

(Middle Chester River—Chart No. 30.)

1	39 08 08.80	76 04 14.09	N 14 56 W	S 14 57 E	949	Cake.
			N 53 36 W	S 53 36 E	517	Melton.
			S 19 39 W	N 19 39 E	527	Booker.
2	39 08 09.25	76 04 19.93	S 2 40 W	N 2 40 E	512	Booker.
			N 56 21 E	S 56 22 W	466	Journey.
			N 5 46 W	S 5 46 E	911	Cake.
3	39 08 16.10	76 04 20.35	S 1 00 W	N 1 00 E	743	Booker.
			N 86 37 E	S 86 37 W	399	Journey.
			N 6 50 W	S 6 50 E	677	Cake.
4	39 08 16.25	76 04 12.41	N 23 21 W	S 23 21 E	728	Cake.
			N 83 09 W	S 83 09 E	463	Melton.
			S 16 30 W	N 16 30 E	780	Booker.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

NORTHWEST (QUEEN ANNES COUNTY).

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	39 08 30.13	76 04 28.43	S 53 39 E N 33 40 E N 75 40 W	N 53 39 W S 33 40 W S 75 40 E	759 238 948	Journey. Cake. Pomona.
2	39 08 49.92	76 04 53.37	S 59 11 E N 66 46 E N 39 52 W	N 59 10 W S 66 46 W S 39 52 E	916 636 538	Cake. Bill. Taste.
3	39 08 54.27	76 04 46.60	N 4 24 E N 63 01 W S 37 17 W	S 4 24 W S 63 01 E N 37 17 E	721 586 728	Make. Taste. Pomona.
4	39 08 33.26	76 04 27.72	N 82 09 W S 6 22 W S 46 51 E	S 82 09 E N 6 22 E N 46 51 W	946 522 812	Pomona. Melton. Journey.

BRICK HOUSE.

(Chesapeake Bay—Off Kent Island—Chart No. 31.)

1	38 55 40.93	76 22 25.00	N 43 59 E N 5 42 W S 59 16 W	S 44 00 W S 5 43 E N 59 14 E	1,379 10,718 6,905	Craney. Sandy Point Light. Thomas Point Shoal Light.
2	38 55 41.83	76 22 57.65	N 62 07 E N 1 07 W S 54 57 W	S 62 07 W S 1 07 E N 54 55 E	2,056 10,638 6,200	Craney. Sandy Point Light. Thomas Point Shoal Light.
3	38 56 45.73	76 22 47.84	S 52 34 E N 46 10 E N 3 08 W	N 52 33 W S 46 11 W S 3 08 E	1,963 4,691 8,492	Craney. Wash. Sandy Point Light.
4	38 57 54.10	76 21 53.66	S 2 10 E N 64 17 E N 17 01 W	N 2 10 W S 64 18 W S 17 02 E	3,502 2,172 6,458	Craney. Wash. Sandy Point Light.
5	38 57 38.73	76 21 24.70	S 11 57 W N 39 17 E N 21 37 W	N 11 57 E S 39 17 W S 21 38 E	3,047 1,887 7,199	Craney. Wash. Sandy Point Light.
6	38 56 05.58	76 22 28.00	N 81 12 E N 5 44 W S 53 20 W	S 81 12 W S 5 44 E N 53 18 E	1,049 9,883 7,302	Craney. Sandy Point Light. Thomas Point Shoal Light.

Survey of Oyster Bars, Queen Annes County, Md.

131

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GUM THICKET.

(Chesapeake Bay—Off Kent Island—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 52 08.37	76 22 45.10	N 10 20 E N 56 03 W S 15 46 W	S 10 20 W S 56 05 E N 15 46 E	8,294 6,516 4,459	Craney. Thomas Point Shoal Light. Bloody Point Bar Light.
2	38 52 08.42	76 23 02.35	N 13 23 E N 53 42 W S 10 00 W	S 13 24 W S 53 44 E N 10 00 E	8,387 6,144 4,370	Craney. Thomas Point Shoal Light. Bloody Point Bar Light.
3	38 53 02.63	76 23 14.86	N 19 44 E N 68 38 W S 3 59 W	S 19 45 W S 68 40 E N 3 59 E	6,726 4,964 6,136	Craney. Thomas Point Shoal Light. Bloody Point Bar Light.
4	38 54 04.55	76 22 49.73	N 20 46 E S 86 59 W S 7 23 W	S 20 47 W N 86 57 E N 7 23 E	4,537 5,292 8,278	Craney. Thomas Point Shoal Light. Bloody Point Bar Light.
5	38 54 05.44	76 22 29.22	N 14 14 E S 86 58 W S 11 12 W	S 14 15 W N 86 56 E N 11 11 E	4,346 5,833 8,399	Craney. Thomas Point Shoal Light. Bloody Point Bar Light.

KENT POINT.

(Chesapeake Bay—Off Bloody Point—Chart No. 31.)

1	38 50 01.13	76 23 31.08	S 4 59 E S 37 30 E N 86 33 E	N 4 58 W N 37 28 W S 86 34 W	7,688 8,834 2,242	Valliant. Haddaway Tenk.
2	38 51 05.68	76 23 37.00	N 15 31 E N 35 04 W S 4 07 E	S 15 33 W S 35 06 E N 4 07 W	10,663 7,028 2,183	Craney. Thomas Point Shoal Light. Bloody Point Bar Light.
3	38 52 08.42	76 23 02.35	N 13 23 E N 53 42 W S 10 00 W	S 13 24 W S 53 44 E N 10 00 E	8,387 6,144 4,370	Craney. Thomas Point Shoal Light. Bloody Point Bar Light.
4	38 52 08.37	76 22 45.10	N 10 20 E N 56 03 W S 15 46 W	S 10 20 W S 56 05 E N 15 46 E	8,294 6,516 4,459	Craney. Thomas Point Shoal Light. Bloody Point Bar Light.
5	38 50 56.25	76 22 54.85	N 40 18 W S 27 11 W S 1 44 W	S 40 20 E N 27 11 E N 1 44 E	7,960 2,090 9,522	Thomas Point Shoal Light. Bloody Point Bar Light. Valliant.
6	38 50 16.48	76 22 40.82	N 36 40 W S 68 39 W S 4 37 W	S 36 42 E N 68 38 E N 4 36 E	9,241 1,423 8,203	Thomas Point Shoal Light. Bloody Point Bar Light. Valliant.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

LONG POINT (EASTERN BAY).

(Eastern Bay—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 51 18.40	76 19 34.33	N 82 32 W S 39 22 E S 77 01 E	S 82 32 E N 39 20 W N 76 59 W	1,123 4,250 5,453	Straight. Kemp Tower. Rich Neck Water Tank.
2	38 51 25.33	76 19 46.67	S 83 39 W S 40 38 E S 75 30 E	N 83 39 E N 40 37 W N 75 28 W	793 4,639 5,825	Straight. Kemp Tower. Rich Neck Water Tank.
3	38 51 53.78	76 19 32.60	N 36 50 W S 47 54 W S 30 36 E	S 36 51 E N 47 53 E N 30 35 W	1,071 1,562 5,204	Mouth. Straight. Kemp Tower.
4	38 52 45.28	76 19 47.60	S 15 40 W S 53 43 E N 46 03 E	N 15 40 E N 53 42 W S 46 04 W	913 7,025 3,972	Mouth. Rich Neck Water Tank. Turkey.
5	38 52 37.54	76 19 15.83	S 60 18 W S 51 06 E N 33 50 E	N 60 18 E N 51 04 W S 33 49 W	1,248 6,201 3,633	Mouth. Rich Neck Water Tank. Turkey.
6	38 52 16.19	76 19 29.57	N 32 32 E N 82 00 W S 34 29 W	S 32 33 W S 82 00 E N 34 29 E	4,433 729 2,187	Turkey. Mouth. Straight.
7	38 51 50.00	76 19 15.73	N 47 50 W S 60 10 W S 26 52 E	S 47 50 E N 60 09 E N 26 51 W	1,467 1,848 4,879	Mouth. Straight. Kemp Tower.

BODKIN SHOALS.

(Eastern Bay—Chart No. 31.)

1	38 51 58.65	76 18 27.46	N 73 37 W S 67 10 W S 11 20 E	S 73 38 E N 67 09 E N 11 20 W	2,460 3,121 4,736	Mouth. Straight. Kemp Tower.
2	38 52 19.47	76 18 56.95	S 89 40 W S 17 44 E S 52 48 E	N 89 40 E N 17 43 W N 52 46 W	1,582 5,612 5,433	Mouth. Kemp Tower. Rich Neck Water Tank.
3	38 53 06.03	76 18 54.67	S 41 19 E N 67 39 E N 35 27 E	N 41 17 W S 67 40 W S 35 28 W	6,463 3,505 2,525	Rich Neck Water Tank. Needle. Turkey.
4	38 53 14.22	76 18 24.42	S 48 05 E N 66 36 E N 20 33 E	N 48 04 W S 66 37 W S 20 33 W	5,764 2,663 1,902	Dixon. Needle. Turkey.
5	38 53 20.65	76 17 59.50	N 64 49 E N 0 24 E S 56 13 W	S 64 49 W S 0 24 W N 56 12 E	1,975 1,564 3,726	Needle. Turkey. Mouth.
6	38 53 36.26	76 16 59.40	N 60 04 W N 32 57 E N 56 35 W	S 60 05 E S 32 57 W S 56 36 E	3,823 374 1,884	Parsons Island Water Tank. Needle. Turkey.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BODKIN SHOALS—Continued.

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
7	38 53 15.14	76 17 04.90	N 18 45 E	S 18 45 W	1,084	Needle.
			N 39 13 W	S 39 13 E	2,258	Turkey.
			S 67 26 W	N 67 24 E	4,912	Mouth.
8	38 52 32.28	76 16 44.32	N 31 40 W	S 31 40 E	3,753	Turkey.
			S 85 01 W	N 84 59 E	5,098	Mouth.
			S 12 35 E	N 12 34 W	3,809	Rich Neck Water Tank.
Thence along county boundary as delineated on Chart No. 31 to corner No. 9.						
9	38 52 11.20	76 17 26.07	N 86 08 W	S 86 10 E	3,987	Mouth.
			S 7 44 W	N 7 44 E	5,114	Kemp Tower.
			S 57 54 E	N 57 55 W	3,246	Dixon.
Thence along county boundary as delineated on Chart No. 31 to corner No. 10.						
10	38 51 59.14	76 17 42.52	N 79 11 W	S 79 12 E	3,609	Mouth.
			S 3 07 W	N 3 07 E	4,667	Kemp Tower.
			S 67 31 E	N 67 30 W	3,445	Dixon.

BRICK HOUSE HILL.

(Eastern Bay—Chart No. 31.)

1	38 52 49.80	76 19 18.59	S 44 26 W	N 44 25 E	1,445	Mouth.
			S 48 40 E	N 48 38 W	6,522	Rich Neck Water Tank.
			N 38 49 E	S 38 50 W	3,342	Turkey.
2	38 52 50.80	76 19 26.63	S 36 53 W	N 36 53 E	1,332	Mouth.
			S 49 39 E	N 49 37 W	6,795	Rich Neck Water Tank.
			N 41 54 E	S 41 55 W	3,451	Turkey.
3	38 53 11.10	76 19 16.92	S 31 06 W	N 31 06 E	2,044	Mouth.
			N 43 59 E	S 44 01 W	6,988	Rich Neck Water Tank.
			N 47 24 E	S 47 25 W	2,786	Turkey.
4	38 53 10.08	76 19 07.41	S 37 17 W	N 37 16 E	2,157	Mouth.
			S 42 41 E	N 42 39 W	6,790	Rich Neck Water Tank.
			N 43 09 E	S 43 10 W	2,632	Turkey.

BUNKER HILL.

(Eastern Bay—Chart No. 31.)

1	38 52 58.18	76 19 42.94	S 23 43 E	N 23 42 W	7,265	Kemp Tower.
			S 50 22 E	N 50 20 W	7,195	Rich Neck Water Tank.
			N 49 41 E	S 49 42 W	3,589	Turkey.
2	38 52 58.43	76 19 51.90	S 25 23 E	N 25 21 W	7,370	Kemp Tower.
			S 51 29 E	N 51 27 W	7,383	Rich Neck Water Tank.
			N 52 07 E	S 52 08 W	3,767	Turkey.
3	38 53 14.63	76 19 53.42	S 23 56 E	N 23 55 W	7,884	Kemp Tower.
			S 48 31 E	N 48 28 W	7,765	Rich Neck Water Tank.
			N 59 36 E	S 59 38 W	3,493	Turkey.
4	38 53 11.33	76 19 39.50	S 21 46 E	N 21 44 W	7,639	Kemp Tower.
			S 47 17 E	N 47 14 W	7,418	Rich Neck Water Tank.
			N 54 38 E	S 54 39 W	3,246	Turkey.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

TURKEY POINT.

(Eastern Bay—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 53 20.65	76 17 59.50	N 64 49 E N 0 24 E S 56 13 W	S 64 49 W S 0 24 W N 56 12 E	1,975 1,504 3,726	Needle. Turkey. Mouth.
2	38 54 01.60	76 18 06.30	N 46 06 E N 51 24 W N 79 29 W	S 46 06 W S 51 24 E S 79 29 E	265 2,098 3,388	Turkey. Batts. Matta.
3	38 53 58.58	76 17 29.90	S 66 28 E N 10 52 W N 69 40 W	N 66 27 W S 10 52 E S 69 40 E	1,098 1,340 820	Needle. Cox. Turkey.
4	38 53 36.26	76 16 59.40	N 60 04 W N 32 57 E N 56 35 W	S 60 05 E S 32 57 W S 56 36 E	3,823 374 1,884	Parsons Island Water Tank. Needle. Turkey.

MIDDLE BLOCK.

(Eastern Bay—Chart No. 31.)

1	38 53 14.22	76 18 24.42	S 48 05 E N 66 36 E N 20 33 E	N 48 04 W S 66 37 W S 20 33 W	5,764 2,663 1,902	Dixon. Needle. Turkey.
2	38 53 51.90	76 18 32.00	N 0 14 E N 30 28 W N 70 24 W	S 0 14 W S 30 28 E S 70 25 E	3,243 1,898 2,817	Dell. Batts. Matta.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 53 57.08	76 18 11.38	S 79 31 E N 43 21 E N 45 51 W	N 79 30 W S 43 21 W S 45 52 E	2,136 461 2,099	Needle. Turkey. Batts.
4	38 54 01.60	76 18 06.30	N 46 06 E N 51 24 W N 79 29 W	S 46 06 W S 51 24 E S 79 29 E	265 2,098 3,388	Turkey. Batts. Matta.
5	38 53 20.65	76 17 59.50	N 64 49 E N 0 24 E S 56 13 W	S 64 49 W S 0 24 W N 56 12 E	1,975 1,504 3,726	Needle. Turkey. Mouth.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WILD GROUND.

(Eastern Bay—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 53 06.03	76 18 54.67	S 41 19 E N 67 39 E N 35 27 E	N 41 17 W S 67 40 W S 35 28 W	6,463 3,505 2,525	Rich Neck Water Tank. Needle. Turkey.
2	38 53 45.50	76 19 39.87	S 8 48 W S 41 26 E N 74 43 E	N 8 48 E N 41 24 W S 74 43 W	2,945 8,250 2,754	Mouth. Rich Neck Water Tank. Turkey.
3	38 54 05.60	76 19 43.00	N 88 59 E N 37 43 E N 58 23 W	S 89 00 W S 37 44 W S 58 24 E	2,738 1,484 920	Turkey. Batts. Matta.
4	38 53 51.90	76 18 32.00	N 0 14 E N 30 28 W N 70 24 W	S 0 14 W S 30 28 E S 70 25 E	3,243 1,898 2,817	Dell. Batts. Matta.
5	38 53 14.22	76 18 24.42	S 48 05 E N 66 36 E N 20 33 E	N 48 04 W S 66 37 W S 20 33 W	5,764 2,663 1,902	Dixon. Needle. Turkey.

PINE TREE.

(Eastern Bay—Chart No. 31.)

1	38 53 37.70	76 19 54.16	S 1 36 W N 86 50 E N 71 56 E	N 1 36 E S 86 51 W S 71 57 W	2,649 4,816 3,190	Mouth. Needle. Turkey.
2	38 53 37.90	76 20 02.86	S 3 21 E N 87 03 E N 73 14 E	N 3 21 W S 87 05 W S 73 16 W	2,659 5,046 3,407	Mouth. Needle. Turkey.
3	38 53 49.34	76 19 49.85	S 3 32 W S 88 28 E N 78 27 E	N 3 32 E N 88 26 W S 78 28 W	3,046 4,697 2,979	Mouth. Needle. Turkey.

GREEVES COVE.

(Cox Creek—Chart No. 31.)

1	38 54 28.94	76 20 21.80	S 78 54 E N 78 39 E N 15 58 E	N 78 52 W S 78 40 W S 15 58 W	3,833 1,970 971	Turkey. Batts. Then.
2	38 54 30.76	76 20 33.95	S 78 55 E N 81 45 E N 48 36 E	N 78 54 W S 81 46 W S 48 36 W	4,159 2,275 1,738	Turkey. Batts. Some.
3	38 54 34.87	76 20 36.40	S 77 15 E N 85 23 E N 53 33 E	N 77 14 W S 85 23 W S 53 33 W	4,250 2,323 1,701	Turkey. Batts. Some.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GREEVES COVE—Continued.

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
4	38 54 39.70	76 20 25.23	S 74 03 E N 89 18 E N 51 42 E	N 74 01 W S 89 19 W S 51 43 W	4,006 2,021 1,368	Turkey. Batts. Some.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 54 45.24	76 20 22.72	S 17 10 E S 85 14 E N 37 13 E	N 17 10 W N 85 13 W S 37 13 W	893 1,962 482	Matta. Batts. Then.
6	38 54 46.80	76 20 04.50	S 81 42 E N 40 56 E N 29 40 W	N 81 41 W S 40 56 W S 29 40 E	1,491 805 382	Batts. Some. Then.
7	38 54 33.60	76 20 12.72	S 75 44 E N 35 14 E N 2 04 E	N 75 43 W S 35 14 W S 2 04 W	3,633 1,289 778	Turkey. Some. Then.

MATTAPEX.

(Cox Creek—Chart No. 31.)

1	38 54 27.39	76 19 31.84	N 54 25 E N 46 47 W S 76 50 W	S 54 25 W S 46 48 E N 76 50 E	756 1,439 1,106	Batts. Then. Matta.
2	38 54 30.65	76 19 41.35	N 4 06 W N 42 22 W S 66 21 W	S 4 06 E S 42 22 E N 66 21 E	1,155 1,185 902	Some. Then. Matta.
3	38 54 33.60	76 20 12.72	S 75 44 E N 35 14 E N 2 04 E	N 75 43 W S 35 14 W S 2 04 W	3,633 1,289 778	Turkey. Some. Then.
4	38 54 46.80	76 20 04.50	S 81 42 E N 40 56 E N 29 40 W	N 81 41 W S 40 56 W S 29 40 E	1,491 805 382	Batts. Some. Then.
5	38 54 58.98	76 20 02.56	S 11 29 W S 66 16 E N 67 30 E	N 11 29 E N 66 17 W S 67 30 W	1,344 1,555 515	Matta. Batts. Some.
6	38 54 56.33	76 19 49.20	N 23 25 E N 89 03 W S 26 46 W	S 23 25 W S 89 03 E N 26 46 E	313 592 1,376	Some. Then. Matta.
7	38 54 58.90	76 19 39.52	N 33 13 W S 84 49 W S 33 38 W	S 33 13 E N 84 48 E N 33 38 E	239 851 1,579	Some. Then. Matta.
8	38 54 43.13	76 19 41.20	N 6 45 W N 60 27 W S 46 41 W	S 6 45 E S 60 27 E N 46 41 E	737 923 1,141	Some. Then. Matta.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SHIPPING CREEK.

(Cox Creek—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 54 05.15	76 19 58.28	N 88 50 E	S 88 50 W	3,142	Turkey.
			N 47 47 E	S 47 47 W	1,771	Batts.
			N 37 22 W	S 37 22 E	627	Matta.
2	38 54 20.61	76 20 08.82	S 82 23 E	N 82 21 W	3,449	Turkey.
			N 67 12 E	S 67 12 W	1,724	Batts.
			N 3 32 W	S 3 32 E	1,217	Then.
3	38 54 30.65	76 19 41.35	N 4 06 W	S 4 06 E	1,155	Some.
			N 42 22 W	S 42 22 E	1,185	Then.
			S 66 21 W	N 66 21 E	902	Matta.
4	38 54 27.39	76 19 31.84	N 54 25 E	S 54 25 W	756	Batts.
			N 46 47 W	S 46 48 E	1,439	Then.
			S 76 50 W	N 76 50 E	1,106	Matta.
5	38 54 05.60	76 19 43.00	N 88 59 E	S 89 00 W	2,738	Turkey.
			N 37 43 E	S 37 44 W	1,484	Batts.
			N 58 23 W	S 58 24 E	920	Matta.

BATTS NECK.

(Cox Creek—Chart No. 31.)

1	38 53 51.90	76 18 32.00	N 0 14 E	S 0 14 W	3,243	Dell.
			N 30 28 W	S 30 28 E	1,898	Batts.
			N 70 24 W	S 70 25 E	2,817	Matta.
2	38 54 05.60	76 19 43.00	N 88 59 E	S 89 00 W	2,738	Turkey.
			N 37 43 E	S 37 44 W	1,484	Batts.
			N 58 23 W	S 58 24 E	920	Matta.
3	38 54 27.39	76 19 31.84	N 54 25 E	S 54 25 W	756	Batts.
			N 46 47 W	S 46 48 E	1,439	Then.
			S 76 50 W	N 76 50 E	1,106	Matta.
4	38 54 34.66	76 18 59.50	N 22 15 E	S 22 16 W	1,947	Dell.
			N 50 46 W	S 50 46 E	307	Batts.
			S 75 33 W	N 75 32 E	1,993	Matta.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

RINGOLD MIDDLEGROUND.

(Cox Creek—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 53 51.90	76 18 32.00	N 0 14 E	S 0 14 W	3,243	Dell.
			N 30 28 W	S 30 28 E	1,898	Batts.
			N 70 24 W	S 70 25 E	2,817	Matta.
2	38 54 34.66	76 18 59.50	N 22 15 E	S 22 16 W	1,947	Dell.
			N 50 46 W	S 50 46 E	307	Batts.
			S 75 33 W	N 75 32 E	1,993	Matta.
3	38 54 36.10	76 18 15.70	N 13 22 W	S 13 22 E	1,802	Dell.
			N 84 02 W	S 84 02 E	1,400	Batts.
			S 24 04 E	N 24 04 W	1,074	Turkey.
4	38 54 20.58	76 18 06.96	N 15 51 W	S 15 52 E	2,367	Dell.
			N 67 35 W	S 67 36 E	1,755	Batts.
			S 24 26 E	N 24 26 W	502	Turkey.
5	38 54 07.46	76 18 17.10	N 7 57 W	S 7 57 E	2,745	Dell.
			N 50 38 W	S 50 39 E	1,753	Batts.
			N 82 08 W	S 82 10 E	3,075	Matta.
6	38 54 01.60	76 18 06.30	N 46 06 E	S 46 06 W	265	Turkey.
			N 51 24 W	S 51 24 E	2,098	Batts.
			N 79 29 W	S 79 29 E	3,388	Matta.
7	38 53 57.08	76 18 11.38	S 79 31 E	N 79 30 W	2,136	Needle.
			N 43 21 E	S 43 21 W	461	Turkey.
			N 45 51 W	S 45 52 E	2,090	Batts.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

ERICKSON SANDS.

(Cox Creek—Chart No. 31.)

1	38 54 34.66	76 18 59.50	N 22 15 E	S 22 16 W	1,947	Dell.
			N 50 46 W	S 50 46 E	307	Batts.
			S 75 33 W	N 75 32 E	1,993	Matta.
2	38 54 57.62	76 18 39.60	N 11 43 E	S 11 43 W	1,050	Dell.
			N 46 53 W	S 46 53 E	945	Top.
			S 52 44 W	N 52 44 E	958	Batts.
3	38 54 54.40	76 18 16.10	N 19 40 W	S 19 40 E	1,206	Dell.
			N 60 02 W	S 60 03 E	1,510	Top.
			S 71 09 W	N 71 09 E	1,460	Batts.
4	38 54 36.10	76 18 15.70	N 13 22 W	S 13 22 E	1,802	Dell.
			N 84 02 W	S 84 02 E	1,400	Batts.
			S 24 04 E	N 24 04 W	1,074	Turkey.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PEA HILL.

(Cox Creek—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 54 54.40	76 18 16.10	N 19 40 W	S 19 40 E	1,206	Dell.
			N 60 02 W	S 60 03 E	1,510	Top.
			S 71 09 W	N 71 09 E	1,460	Batts.
2	38 54 57.62	76 18 39.60	N 11 43 E	S 11 43 W	1,050	Dell.
			N 46 53 W	S 46 53 E	945	Top.
			S 52 44 W	N 52 44 E	958	Batts.
3	38 55 11.26	76 18 45.30	N 32 37 E	S 32 37 W	674	Dell.
			N 71 00 W	S 71 00 E	571	Top.
			S 30 29 W	N 30 28 E	1,206	Batts.
4	38 55 26.11	76 18 44.46	N 78 56 E	S 78 56 W	348	Dell.
			N 18 20 W	S 18 20 E	1,263	Ware.
			S 60 43 W	N 60 43 E	644	Top.
5	38 55 13.30	76 18 16.58	N 38 15 W	S 38 16 E	635	Dell.
			N 84 50 W	S 84 51 E	1,301	Top.
			S 51 03 W	N 51 03 E	1,760	Batts.

STEVENS.

(Cox Creek—Chart No. 31.)

1	38 55 11.26	76 18 45.30	N 32 37 E S 71 00 W S 30 29 W	S 32 37 W S 71 00 E N 30 28 E	674 571 1,206	Dell. Top. Batts.
2	38 55 12.42	76 18 57.05	S 34 43 E N 51 51 E N 2 16 W	N 34 42 W S 51 51 W S 2 16 E	2,683 855 1,661	Turkey. Dell. Ware.
3	38 55 19.60	76 19 00.21	S 33 21 E N 69 16 E N 0 43 E	N 33 21 W S 69 16 W S 0 43 W	2,930 808 1,418	Turkey. Dell. Ware.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 55 31.72	76 19 13.30	S 21 27 E S 83 39 E N 53 45 E	N 21 27 W N 83 39 W S 53 45 W	541 1,108 1,259	Top. Dell. Tom.
5	38 55 34.62	76 19 00.00	S 14 12 W S 73 39 E N 45 48 E	N 14 12 E N 73 39 W S 45 48 W	621 783 927	Top. Dell. Tom.
6	38 55 26.11	76 18 44.46	N 78 56 E N 18 20 W S 60 43 W	S 78 56 W S 18 20 E N 60 43 E	348 1,263 644	Dell. Ware. Top.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

JONES HOLE.

(Cox Creek—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 55 26.11	76 18 44.46	N 78 56 E N 18 20 W S 60 43 W	S 78 56 W S 18 20 E N 60 43 E	348 1,263 644	Dell. Ware. Top.
2	38 55 34.62	76 19 00.00	S 14 12 W S 73 39 E N 45 48 E	N 14 12 E N 73 39 W S 45 48 W	621 783 927	Top. Dell. Tom.
3	38 55 41.86	76 18 56.58	S 54 53 E N 55 00 E N 6 40 W	N 54 53 W S 55 00 W S 6 40 E	607 702 671	Dell. Tom. Ware.
4	38 55 48.90	76 18 58.50	S 45 22 E N 75 12 E N 3 39 W	N 45 22 W S 75 12 W S 3 39 E	1,000 647 431	Dell. Tom. Ware.
5	38 56 01.78	76 18 48.73	S 21 46 E S 53 50 E N 42 26 E	N 21 46 W N 53 50 W S 42 27 W	1,223 456 1,073	Dell. Tom. Greek.
6	38 55 57.20	76 18 42.72	N 30 52 E N 71 17 W S 24 01 W	S 30 53 W S 71 17 E N 24 01 E	1,102 468 1,493	Greek. Ware. Top.

POND MARSH.

(Cox Creek—Chart No. 31.)

1	38 55 57.20	76 18 42.72	N 30 52 E N 71 17 W S 24 01 W	S 30 53 W S 71 17 E N 24 01 E	1,102 468 1,493	Greek. Ware. Top.
2	38 56 01.78	76 18 48.73	S 21 46 E S 53 50 E N 42 26 E	N 21 46 W N 53 50 W S 42 27 W	1,223 456 1,073	Dell. Tom. Greek.
3	38 56 06.34	76 18 51.02	S 45 23 E N 50 52 E N 4 58 E	N 45 23 W S 50 53 W S 4 58 W	601 1,012 1,179	Tom. Greek. Tuxon.
4	38 56 07.92	76 18 56.05	S 49 41 E N 57 28 E N 11 48 E	N 49 41 W S 57 29 W S 11 49 W	736 1,087 1,146	Tom. Greek. Tuxon.
5	38 56 26.53	76 19 11.72	S 88 09 E N 4 07 W N 78 52 W	N 88 09 W S 4 07 E S 78 52 E	1,331 419 270	Greek. Liver. Coffee.
6	38 56 31.40	76 18 56.38	S 80 30 W S 4 45 W S 77 23 E	N 80 30 E N 4 45 E N 77 23 W	679 1,007 948	Coffee. Ware. Greek.
7	38 56 24.24	76 18 26.81	N 8 54 E N 43 10 W S 48 32 W	S 8 54 W S 43 11 E N 48 32 E	669 783 1,150	Ville. Tuxon. Ware.
8	38 55 59.52	76 18 37.10	N 10 40 W N 83 04 W S 17 47 E	S 10 40 E S 83 04 E N 17 47 W	1,429 595 202	Tuxon. Ware. Tom.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ISLAND COVE.

(Cox Creek—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 56 26.53	76 19 11.72	S 88 09 E	N 88 09 W	1,331	Greek.
			N 4 07 W	S 4 07 E	419	Liver.
			N 78 52 W	S 78 52 E	270	Coffee.
2	38 56 32.46	76 19 35.90	S 68 19 E	N 68 18 W	400	Coffee.
			N 70 15 E	S 70 15 W	645	Liver.
			N 2 44 E	S 2 44 W	600	Samuel.
3	38 56 42.00	76 19 43.12	S 75 20 E	N 75 19 W	2,229	Greek.
			S 82 34 E	N 82 34 W	804	Liver.
			N 38 09 E	S 38 09 W	354	Samuel.
4	38 56 52.40	76 19 28.60	S 66 11 W	N 66 11 E	178	Samuel.
			S 12 19 E	N 12 19 W	840	Coffee.
			S 35 40 E	N 35 40 W	2,432	Tom.
5	38 56 38.40	76 19 13.24	N 54 51 W	S 54 51 E	694	Samuel.
			S 32 56 W	N 32 56 E	414	Coffee.
			S 33 59 E	N 33 59 W	1,813	Tom.
6	38 56 31.40	76 18 56.38	S 80 30 W	N 80 30 E	679	Coffee.
			S 4 45 W	N 4 45 E	1,007	Ware.
			S 77 23 E	N 77 23 W	948	Greek.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ROOKS.

(Cox Creek—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 56 24.24	76 18 26.81	N 8 54 E N 43 10 W S 48 32 W	S 8 54 W S 43 11 E N 48 32 E	669 783 1,150	Ville. Tuxon. Ware.
2	38 56 31.40	76 18 56.38	S 80 30 W S 4 45 W S 77 23 E	N 80 30 E N 4 45 E N 77 23 W	679 1,007 948	Coffee. Ware. Greek.
3	38 56 41.66	76 18 37.67	S 38 02 E N 79 16 E N 25 59 E	N 38 02 W S 79 16 W S 25 59 W	702 397 682	Greek. Ville. Timber.
4	38 56 48.16	76 18 48.02	S 77 37 E N 55 23 E N 1 39 W	N 77 37 W S 55 23 W S 1 39 E	678 694 338	Ville. Timber. Steve.
5	38 56 52.57	76 18 35.24	S 47 54 E N 43 44 E N 61 19 W	N 47 54 W S 43 44 W S 61 19 E	440 340 395	Ville. Timber. Steve.
6	38 56 43.85	76 18 22.88	N 9 32 W S 81 57 W S 3 57 E	S 9 32 E N 81 57 E N 3 57 W	547 645 628	Timber. Tuxon. Greek.
Thence from corner No. 6 along the mean low water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
7	38 56 28.50	76 18 11.22	N 44 21 W N 65 42 W S 67 31 W	S 44 21 E S 65 42 E N 67 30 E	1,401 1,038 285	Steve. Tuxon. Greek.
8	38 56 25.18	76 18 18.70	N 10 06 W N 35 05 W N 87 41 W	S 10 06 E S 35 05 E S 87 41 E	628 1,360 67	Ville. Steve. Greek.
9	38 56 27.30	76 18 20.64	N 6 02 W N 56 11 W S 49 50 W	S 6 02 E S 56 11 E N 49 49 E	561 841 1,341	Ville. Tuxon. Ware.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

THOMPSONS.

(Cox Creek—Chart No. 3r.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 56 48.16	76 18 48.02	S 77 37 E N 55 23 E N 1 39 W	N 77 37 W S 55 23 W S 1 39 E	678 694 338	Ville. Timber. Steve.
2	38 57 02.40	76 18 46.74	S 80 55 E N 8 15 E N 51 16 W	N 80 55 W S 8 15 W S 51 16 E	545 503 495	Timber. Landing. Thompson.
3	38 57 03.10	76 18 54.30	S 81 32 E N 29 45 E N 33 14 W	N 81 32 W S 29 45 W S 33 14 E	745 547 343	Timber. Landing. Thompson.
4	38 57 13.24	76 19 00.40	S 31 56 E N 72 56 E N 10 02 E	N 31 56 W S 72 57 W S 10 02 W	598 452 632	Steve. Landing. Hope.
5	38 57 37.50	76 18 47.92	S 48 07 W N 22 11 W S 0 32 W	N 48 07 E N 22 11 E N 0 32 E	294 943 1,325	Hope. Thompson. Steve.
6	38 57 17.18	76 18 44.00	S 10 14 W S 38 33 E N 3 06 W	N 10 14 E N 38 33 W S 3 06 E	651 747 408	Steve. Timber. Knock.
Thence from corner No. 6 along the mean low water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
7	38 57 13.24	76 18 40.36	S 84 21 W N 22 37 W S 39 19 E	N 84 20 E N 22 37 E N 39 18 W	558 550 584	Thompson. Steve. Timber.
8	38 57 07.06	76 18 26.80	N 80 27 W S 62 15 W S 31 33 W	S 80 27 E N 62 15 E N 31 32 E	925 642 1,025	Thompson. Steve. Tuxon.
9	38 56 52.57	76 18 35.24	S 47 54 E N 43 44 E N 61 19 W	N 47 54 W S 43 44 W S 61 19 E	440 340 395	Ville. Timber. Steve.

JOHNSON ISLAND.

(Crab Alley Bay—Chart No. 3r.)

1	38 55 24.75	76 16 46.80	S 41 07 W S 75 54 E N 34 40 E	N 41 07 E N 75 54 W S 34 40 W	2,111 1,696 1,662	Cox. Norman. Over.
2	38 55 30.85	76 16 58.97	S 30 44 E S 72 32 E N 20 49 W	N 30 44 W N 72 31 W S 20 49 E	2,090 2,061 1,182	Cox. Norman. Tull.
3	38 55 54.98	76 16 59.34	S 54 03 E N 74 46 E N 54 38 W	N 54 02 W S 74 47 W S 54 38 E	2,441 1,322 503	Norman. Over. Tull.
4	38 56 03.90	76 16 26.66	S 89 34 W S 32 45 E N 83 36 E	N 89 34 E N 32 46 W S 83 36 W	1,271 2,060 417	Tull. Norman. Over.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CRAB ALLEY LUMPS.

(Crab Alley Bay—Charts Nos. 31 and 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station		
			Forward	Back				
	° / ' "	° / ' "	° / '	° / '	Yards.			
1	38. 55 00. 00	76 16 46. 54	S 72 54 E N 75 34 E N 23 05 E	N 72 53 W S 75 35 W S 23 06 W	3, 112 1, 692 2, 393	Parsons Norman. Over.	Island	Water [Tank.
2	38 55 24. 75	76 16 46. 80	S 41 07 W S 75 54 E N 34 40 E	N 41 07 E N 75 54 W S 34 40 W	2, 111 1, 696 1, 662	Cox. Norman. Over.		
3	38 56 03. 90	76 16 26. 66	S 89 34 W S 32 45 E N 83 36 E	N 89 34 E N 32 46 W S 83 36 W	1, 271 2, 060 417	Tull. Norman. Over.		
4	38 55 51. 92	76 16 08. 26	N 8. 48 W N 77 21 W S 25 22 E	S 8 48 E S 77 21 E N 25 21 W	456 1, 799 1, 471	Over. Tull. Norman.		
5	38 55 00. 00	76 16 00. 00	N 44 23 E N 42 37 W S 73 56 W	S 44 23 W S 42 37 E N 73 54 E	589 2, 914 2, 729	Norman. Tull. Cox.		

CEDAR ISLAND.

(Crab Alley Bay—Chart No. 31.)

1	38 54 46. 17	76 17 31. 86	S 34 48 W S 83 52 E N 38 38 E	N 34 47 E N 83 50 W S 38 39 W	352 4, 193 3, 415	Cox. Parsons Over.	Island	[Tank. Water
2	38 55 00. 92	76 17 50. 90	S 31 34 E N 83 19 E N 50 30 E	N 31 33 W S 83 21 W S 50 31 W	2, 982 3, 357 3, 413	Needle. Norman. Over.		
3	38 55 43. 39	76 17 35. 13	S 2 58 W S 70 22 E N 71 35 E	N 2 58 E N 70 21 W S 71 36 W	2, 222 3, 099 2, 338	Cox. Norman. Over.		
4	38 55 39. 02	76 17 21. 60	S 12 49 W S 70 46 E N 11 58 E	N 12 49 E N 70 45 W S 11 59 W	2, 125 2, 714 848	Cox. Norman. Tull.		
5	38 55 27. 30	76 17 24. 08	S 13 37 W S 79 15 E N 11 09 W	N 13 37 E N 79 14 W S 11 09 E	1, 725 2, 675 1, 249	Cox. Norman. Tull.		
6	38 55 30. 85	76 16 58. 97	S 30 44 E S 72 32 E N 20 49 W	N 30 44 W N 72 31 W S 20 49 E	2, 090 2, 061 1, 182	Cox. Norman. Tull.		
7	38 55 24. 75	76 16 46. 80	S 41 07 W S 75 54 E N 34 40 E	N 41 07 E N 75 54 W S 34 40 W	2, 111 1, 696 1, 662	Cox. Norman. Over.		
8	38 55 00. 00	76 16 46. 54	S 72 54 E N 75 34 E N 23 05 E	N 72 53 W S 75 35 W S 23 06 W	3, 112 1, 692 2, 393	Parsons Norman. Over.	Island	Water [Tank.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

NORMANS FINE EYES.

(Eastern Bay—Charts Nos. 31 and 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station			
			Forward	Back					
	° ' "	° ' "	° ' "	° ' "					
					Yards.				
1	38 54 23.01	76 16 46.20	N 83 37 E N 44 19 W N 70 42 W	S 83 38 W S 44 20 E S 70 43 E	2,984 2,333 1,487	Parsons Norman. Cox.	Island	Water	[Tank.
2	38 55 00.00	76 16 46.54	S 72 54 E N 75 34 E N 23 05 E	N 72 53 W S 75 35 W S 23 06 W	3,112 1,692 2,393	Parsons Norman. Over.	Island	Water	[Tank.
3	38 55 00.00	76 16 00.00	N 44 23 E N 42 37 W S 73 56 W	S 44 23 W S 42 37 E N 73 54 E	589 2,914 2,729	Norman. Tull. Cox.			
4	38 54 47.63	76 15 58.00	S 73 37 E N 23 13 W S 82 47 W	N 73 36 W S 23 13 E N 82 46 E	1,767 912 2,696	Parsons Norman. Cox.	Island	Water	[Tank.
5	38 54 37.00	76 15 16.13	N 31 50 W S 55 27 W S 54 20 E	S 31 50 E N 55 26 E N 54 20 W	1,410 3,058 619	Norman. Needle. Parsons.			
6	38 54 29.50	76 15 40.98	S 84 40 E N 3 30 W N 85 00 W	N 84 39 W S 3 30 E S 85 01 E	1,164 1,453 3,134	Parsons. Norman. Cox.			
7	38 54 33.30	76 16 07.13	S 89 34 E N 24 26 E N 86 35 W	N 89 33 W S 24 26 W S 86 36 E	1,937 1,452 2,438	Parsons Norman. Cox.	Island	Water	[Tank.

COX NECK.

(Eastern Bay—Chart No. 31.)

1	38 54 03.40	76 16 57.90	N 73 07 E N 39 45 E N 43 33 W	S 73 08 W S 39 45 W S 43 33 E	3,421 3,030 1,591	Parsons Norman. Cox.	Island	Water	[Tank.
2	38 54 05.63	76 17 31.13	N 77 31 E N 11 33 W S 86 20 W	S 77 32 W S 11 33 E N 86 20 E	4,250 1,100 738	Parsons Cox. Turkey.	Island	Water	[Tank.
3	38 54 40.83	76 17 37.30	S 86 27 E N 70 15 E N 11 55 E	N 86 25 W S 70 16 W S 11 56 W	4,320 3,162 2,853	Parsons Norman. Tull.	Island	Water	[Tank.
4	38 54 46.17	76 17 31.86	S 34 48 W S 83 52 E N 38 38 E	N 34 47 E N 83 50 W S 38 39 W	352 4,193 3,415	Cox. Parsons Over.	Island	Water	[Tank.
5	38 55 00.00	76 16 46.54	S 72 54 E N 75 34 E N 23 05 E	N 72 53 W S 75 35 W S 23 06 W	3,112 1,692 2,393	Parsons Norman. Over.	Island	Water	[Tank.
6	38 54 23.01	76 16 46.20	N 83 37 E N 44 19 W N 70 42 W	S 83 38 W S 44 20 E S 70 43 E	2,984 2,333 1,487	Parsons Norman. Cox.	Island	Water	[Tank.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BODKIN ISLAND.

(Eastern Bay—Charts Nos. 31 and 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station		
			Forward	Back				
	° / '	° / '	° / '	° / '				
1	38 54 03.40	76 16 57.90	N 73 07 E N 39 45 E N 43 33 W	S 73 08 W S 39 45 W S 43 33 E	Yards. 3,421 3,030 1,591	Parsons Norman. Cox.	Island	Water [Tank.]
2	38 54 23.01	76 16 46.20	N 83 37 E N 44 19 W N 70 42 W	S 83 38 W S 44 20 E S 70 43 E	2,984 2,333 1,487	Parsons Norman. Cox.	Island	Water [Tank.]
3	38 54 33.30	76 16 07.13	S 89 34 E N 24 26 E N 86 35 W	N 89 33 W S 24 26 W S 86 36 E	1,937 1,452 2,438	Parsons Norman. Cox.	Island	Water [Tank.]
4	38 54 05.40	76 16 28.53	N 27 14 E N 59 51 W N 42 23 W	S 27 14 W S 59 52 E S 42 23 E	2,545 2,162 904	Norman. Cox. Needle.		

PARSONS ISLAND.

(Eastern Bay—Chart No. 32.)

1	38 53 36.00	76 15 37.82	N 31 15 E N 3 01 W N 57 03 W	S 31 16 W S 3 01 E S 57 04 E	2,242 3,259 3,820	Parsons Norman. Cox.	Island	Water [Tank.]
2	38 53 58.40	76 16 16.00	N 61 50 E N 18 28 E N 59 00 W	S 61 50 W S 18 28 W S 59 01 E	2,461 2,634 2,567	Parsons Norman. Cox.	Island	Water [Tank.]
3	38 54 06.43	76 16 13.60	N 67 04 E N 19 05 E N 65 05 W	S 67 05 W S 19 05 W S 65 06 E	2,287 2,358 2,496	Parsons Norman. Cox.	Island	Water [Tank.]
4	38 54 07.22	76 15 49.00	N 59 21 E N 3 12 E N 70 37 W	S 59 21 W S 3 12 W S 70 38 E	1,695 2,205 3,086	Parsons Norman. Cox.	Island	Water [Tank.]
5	38 54 29.50	76 15 40.98	S 84 40 E N 3 30 W N 85 00 W	N 84 39 W S 3 30 E S 85 01 E	1,164 1,453 3,134	Parsons. Norman. Cox.		
6	38 54 37.00	76 15 16.13	N 31 50 W S 55 27 W S 54 20 E	S 31 50 E N 55 26 E N 54 20 W	1,410 3,058 619	Norman. Needle. Parsons.		
7	38 53 59.10	76 15 18.07	N 8 32 E N 15 37 W S 79 31 W	S 8 32 W S 15 38 E N 79 31 E	3,164 2,570 2,509	Alley. Norman. Needle.		

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BUCKHORN.

(Prospect Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 57 44.82	76 14 50.80	S 46 27 E	N 46 27 W	1,098	Marshy. Railroad. Bridge.
			N 53 08 E	S 53 08 W	920	
			N 7 45 W	S 7 45 E	973	
2	38 57 54.01	76 15 09.06	S 50 07 E	N 50 07 W	1,663	Marshy. Railroad. Bridge.
			N 78 45 E	S 78 46 W	1,240	
			N 28 08 E	S 28 08 W	741	
3	38 58 01.44	76 15 05.70	S 42 03 E	N 42 03 W	1,774	Marshy. Railroad. Bridge.
			S 89 34 E	N 89 33 W	1,128	
			N 32 55 E	S 32 56 W	480	
4	38 57 58.14	76 14 56.20	S 37 53 E	N 37 53 W	1,528	Marshy. Railroad. Bridge.
			N 83 20 E	S 83 20 W	884	
			N 1 14 E	S 1 14 W	514	
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 58 00.05	76 14 48.18	S 29 47 E	N 29 47 W	1,463	Marshy. Railroad. Bridge.
			N 86 44 E	S 86 44 W	667	
			N 23 58 W	S 23 58 E	492	

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WELL COVE.

(Prospect Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /		
1	38 57 20.22	76 14 36.28	N 14 21 E S 81 45 W S 18 44 W	S 14 21 W N 81 45 E N 18 43 E	1,426 814 2,189	Railroad. Kirwan. Dull.
2	38 57 44.82	76 14 50.80	S 46 27 E N 53 08 E N 7 45 W	N 46 27 W S 53 08 W S 7 45 E	1,098 920 973	Marshy. Railroad. Bridge.
3	38 58 00.05	76 14 48.18	S 29 47 E N 86 44 E N 23 58 W	N 29 47 W S 86 44 W S 23 58 E	1,463 667 492	Marshy. Railroad. Bridge.
Thence from corner No. 3 along the mean low water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 58 04.54	76 14 52.38	S 30 30 E S 81 42 E N 12 52 E	N 30 30 W N 81 42 W S 12 52 W	1,650 785 1,543	Marshy. Railroad. Thin.
5	38 58 05.70	76 14 48.08	S 26 22 E S 77 04 E N 8 56 E	N 26 22 W N 77 04 W S 8 56 W	1,631 681 1,483	Marshy. Railroad. Thin.
6	38 57 55.78	76 14 36.16	S 20 02 E N 62 31 E N 41 00 W	N 20 01 W S 62 32 W S 41 00 E	1,199 395 787	Marshy. Railroad. Bridge.
7	38 57 45.77	76 14 30.41	N 35 38 W S 44 31 W S 18 11 E	S 35 38 E N 44 31 E N 18 11 W	1,146 1,369 830	Bridge. Kirwan. Marshy.
8	38 57 30.64	76 14 15.04	N 36 38 W S 71 04 W S 27 30 W	S 36 39 E N 71 03 E N 27 30 E	1,797 1,442 2,734	Bridge. Kirwan. Dull.
Thence from corner No. 8 along the mean low water line of the shore to corner No. 9, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
9	38 57 22.38	76 14 20.57	N 2 38 W S 81 10 W S 27 29 W	S 2 38 E N 81 10 E N 27 29 E	1,310 1,234 2,419	Railroad. Kirwan. Dull.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SANDY POINT.

(Prospect Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 57 21.80	76 15 12.78	S 44 47 E N 89 11 E N 44 42 E	N 44 46 W S 89 12 W S 44 43 W	2,462 1,376 1,869	Bonnet. Marshy. Railroad.
Thence from corner No. 1 along the mean low water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 57 22.31	76 15 23.96	S 48 52 E N 89 55 E N 50 52 E	N 48 51 W S 89 56 W S 50 53 W	2,694 1,669 2,977	Bonnet. Marshy. Railroad.
3	38 57 27.81	76 15 30.82	S 48 34 E S 84 20 E N 57 50 E	N 48 33 W N 84 19 W S 57 51 W	2,947 1,859 2,114	Bonnet. Marshy. Railroad.
4	38 57 54.01	76 15 09.06	S 50 07 E N 78 45 E N 28 08 E	N 50 07 W S 78 46 W S 28 08 W	1,663 1,240 741	Marschy. Railroad. Bridge.
5	38 57 44.82	76 14 50.80	S 46 27 E N 53 08 E N 7 45 W	N 46 27 W S 53 08 W S 7 45 E	1,098 920 973	Marschy. Railroad. Bridge.
6	38 57 37.63	76 15 03.60	S 65 35 E N 53 29 E N 9 41 E	N 65 35 W S 53 29 W S 9 41 W	1,245 1,335 1,224	Marschy. Railroad. Bridge.
Thence from corner No. 6 along the mean low water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
7	38 57 31.44	76 15 13.18	S 40 05 E S 77 34 E N 52 52 E	N 40 05 W N 77 33 W S 52 53 W	2,710 1,418 1,662	Bonnet. Marshy. Railroad.

HOG ISLAND.

(Prospect Bay—Chart No. 32.)

1	38 57 20.22	76 14 36.28	N 14 21 E S 81 45 W S 18 44 W	S 14 21 W N 81 45 E N 18 43 E	1,426 814 2,189	Railroad. Kirwan. Dull.
2	38 57 20.52	76 14 49.96	S 33 37 E N 85 22 E N 27 29 E	N 33 37 W S 85 22 W S 27 29 W	2,047 776 1,545	Bonnet. Marshy. Railroad.
3	38 57 37.63	76 15 03.60	S 65 35 E N 53 29 E N 9 41 E	N 65 35 W S 53 29 W S 9 41 W	1,245 1,335 1,224	Marschy. Railroad. Bridge.
4	38 57 44.82	76 14 50.80	S 46 27 E N 53 08 E N 7 45 W	N 46 27 W S 53 08 W S 7 45 E	1,098 920 973	Marschy. Railroad. Bridge.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WALTER WHITE.

(Prospect Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 56 25.62	76 14 33.54	N 78 09 E S 26 58 W S 73 19 W	S 78 09 W S 26 58 E N 73 19 E	716 1,935 809	Bonnet. Kirwan. Dull.
2	38 56 37.34	76 15 04.08	S 46 20 W S 80 38 E N 36 55 E	N 46 20 E N 80 38 W S 36 55 W	949 1,526 1,907	New Barn Cupola. Bonnet. Marshy.
3	38 57 23.90	76 15 04.12	S 39 38 E S 87 26 E N 40 50 E	N 39 38 W N 87 26 W S 40 50 W	2,361 1,148 1,661	Bonnet. Marshy. Railroad.
4	38 57 20.52	76 14 49.96	S 33 37 E N 85 22 E N 27 29 E	N 33 37 W S 85 22 W S 27 29 W	2,047 776 1,545	Bonnet. Marshy. Railroad.
5	38 57 20.22	76 14 36.28	N 14 21 E S 81 45 W S 18 44 W	S 14 21 W N 81 45 E N 18 43 E	1,426 814 2,189	Railroad. Kirwan. Dull.
6	38 57 07.56	76 14 35.66	S 30 50 E N 38 29 E N 69 19 W	N 30 50 W S 38 29 W S 69 19 E	1,476 639 878	Bonnet. Marshy. Kirwan.

PROSPECT.

(Prospect Bay—Chart No. 32.)

1	38 56 25.62	76 14 33.54	N 78 09 E N 26 58 W S 73 19 W	S 78 09 W S 26 58 E N 73 19 E	716 1,935 809	Bonnet. Kirwan. Dull.
2	38 57 07.56	76 14 35.66	S 30 50 E N 38 29 E N 69 19 W	N 30 50 W S 38 29 W S 69 19 E	1,476 639 878	Bonnet. Marshy. Kirwan.
3	38 57 08.86	76 14 18.78	N 24 07 W N 78 07 W S 34 33 W	S 24 07 E S 78 08 E N 34 32 E	2,384 1,294 2,053	Bridge. Kirwan. Dull.
4	38 56 28.00	76 14 19.97	N 79 00 E N 36 54 W S 74 34 W	S 79 00 W S 36 55 E N 74 34 E	350 2,056 1,175	Bonnet. Kirwan. Dull.

Survey of Oyster Bars, Queen Annes County, Md.

151

BOUNDARIES OF NATURAL OYSTER BARS—continued.

DOMINION.

(Prospect Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 55 54.10	76 14 30.30	N 26 58 E N 46 01 W S 46 30 W	S 26 58 W S 46 01 E N 46 30 E	1,357 1,195 1,088	Bonnet. Dull. Alley.
2	38 55 55.64	76 14 52.48	N 46 01 E N 19 32 W N 52 52 W	S 46 01 W S 19 32 E S 52 54 E	1,668 827 1,245	Bonnet. Dull. New Barn Cupola.
3	38 56 11.72	76 15 21.64	S 22 45 E N 64 19 E N 47 00 W	N 22 45 W S 64 20 W S 47 00 E	1,457 546 306	Alley. Dull. New Barn Cupola.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 56 19.44	76 15 11.92	N 3 57 E S 83 52 W S 10 41 E	S 3 57 W N 83 52 E N 10 40 W	1,938 482 1,633	Kirwan. New Barn Cupola. Alley.
5	38 56 19.48	76 15 06.87	N 0 00 E S 85 04 W S 6 12 E	S 0 00 W N 85 04 E N 6 11 W	1,932 616 1,614	Kirwan. New Barn Cupola. Alley.
Thence from corner No. 5 along the mean low-water line of the shore to corner No. 6, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
6	38 56 17.28	76 15 02.60	N 88 19 W S 2 18 E N 73 43 E	S 88 20 E N 2 17 W S 73 44 W	725 1,532 1,528	New Barn Cupola. Alley. Bonnet.
7	38 56 25.62	76 14 33.54	N 78 09 E N 26 58 W S 73 19 W	S 78 09 W S 26 58 E N 73 19 E	716 1,935 809	Bonnet. Kirwan. Dull.

BIBBY.

(Prospect Bay—Chart No. 32.)

1	38 55 40.54	76 15 05.90	S 26 59 E N 3 26 E N 26 52 W	N 26 59 W S 3 26 W S 26 52 E	327 1,290 1,413	Alley. Dull. New Barn Cupola.
2	38 55 48.28	76 15 27.44	S 52 20 E N 32 07 E N 4 04 W	N 52 20 W S 32 07 W S 4 04 E	904 1,213 1,002	Alley. Dull. New Barn Cupola.
3	38 56 11.72	76 15 21.64	S 22 45 E N 64 19 E N 47 00 W	N 22 45 W S 64 20 W S 47 00 E	1,457 546 306	Alley. Dull. New Barn Cupola.
4	38 55 55.64	76 14 52.48	N 46 01 E N 19 32 W N 52 52 W	S 46 01 W S 19 32 E S 52 54 E	1,668 827 1,245	Bonnet. Dull. New Barn Cupola.
5	38 55 43.66	76 15 05.48	N 44 38 E N 3 12 E N 29 21 W	S 44 38 W S 3 12 W S 29 21 E	2,195 1,184 1,328	Bonnet. Dull. New Barn Cupola.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

NORMANS MARSH.

(Prospect Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 55 09.76	76 14 32.20	N 62 15 E N 44 44 W S 24 26 W	S 62 14 W S 44 44 E N 24 26 E	3, 139 1, 051 1, 367	Brian Reference Station. Alley. [Tank. Parsons Island Water
2	38 55 18.62	76 14 56.14	S 2 25 E N 71 10 E N 13 42 W	N 2 25 W S 71 11 W S 13 42 E	1, 545 3, 601 458	Parsons Island Water Tank. Brian Reference Station. Alley.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 55 43.66	76 15 05.48	N 44 38 E N 3 12 E N 29 21 W	S 44 38 W S 3 12 W S 29 21 E	2, 195 1, 184 1, 328	Bonnet. Dull. New Barn Cupola.
4	38 55 55.64	76 14 52.48	N 46 01 E N 19 32 W N 52 52 W	S 46 01 W S 19 32 E S 52 54 E	1, 668 827 1, 245	Bonnet. Dull. New Barn Cupola.
5	38 55 54.10	76 14 30.30	N 26 58 E N 46 01 W S 46 30 W	S 26 58 W S 46 01 E N 46 30 E	1, 357 1, 195 1, 088	Bonnet. Dull. Alley.
6	38 55 37.10	76 14 36.84	N 26 07 W S 74 06 W S 11 34 W	S 26 07 E N 74 06 E N 11 33 E	1, 564 642 2, 211	Dull. Alley. [Tank. Parsons Island Water
7	38 55 16.34	76 14 18.94	N 7 16 E N 64 17 W S 31 57 W	S 7 16 W S 64 17 E N 31 57 E	2, 503 1, 208 1, 729	Bonnet. Alley. [Tank. Parsons Island Water

BOUNDARIES OF NATURAL, OYSTER BARS—continued.

HOOD.

(Prospect Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 55 00.74	76 14 05.56	N 49 38 E	S 49 38 W	2,725	Brian Reference Station.
			N 53 54 W	S 53 55 E	1,784	Alley.
			N 49 25 W	S 49 25 E	1,786	Parsons.
2	38 55 40.74	76 14 23.86	N 15 02 E	S 15 02 W	1,719	Bonnet.
			S 72 43 W	N 72 42 E	1,004	Alley.
			S 18 56 W	N 18 56 E	2,420	Parsons
3	38 56 28.00	76 14 19.97	N 79 00 E	S 79 00 W	350	Bonnet.
			N 36 54 W	S 36 55 E	2,056	Kirwan.
			S 74 34 W	N 74 34 E	1,175	Dull.
4	38 56 24.54	76 14 05.44	S 62 54 E	N 62 53 W	2,328	Brian Reference Station.
			N 12 04 W	S 12 04 E	188	Bonnet.
			S 82 38 W	N 82 37 E	1,528	Dull.
5	38 56 31.94	76 13 50.00	S 81 34 W	N 81 34 E	451	Bonnet.
			S 42 22 W	N 42 21 E	2,746	Alley.
			S 22 38 W	N 22 37 E	4,590	Parsons.
6	38 56 26.46	76 13 37.50	N 81 18 W	S 81 18 E	784	Bonnet.
			S 49 50 W	N 49 49 E	2,853	Alley.
			S 27 21 W	N 27 20 E	4,563	Parsons.
7	38 56 24.74	76 13 28.26	N 80 09 W	S 80 10 E	1,033	Bonnet.
			S 53 40 W	N 53 40 E	3,008	Alley.
			S 30 49 W	N 30 48 E	4,393	Parsons
8	38 55 25.69	76 13 46.50	N 83 51 W	S 83 52 E	1,954	Alley.
			S 42 52 W	N 42 52 E	2,732	Parsons.
			S 31 36 E	N 31 35 W	4,407	Green.

[Tank.
Water[Tank.
Water

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CABIN CREEK.

(Prospect Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '		
1	38 55 25.69	76 13 46.50	N 83 51 W S 42 52 W S 31 36 E	S 83 52 E N 42 52 E N 31 35 W	Yards. 1,954 2,732 4,407	Alley. Parsons. Green.
2	38 56 24.74	76 13 28.26	N 80 09 W S 53 40 W S 30 49 W	S 80 10 E N 53 40 E N 30 48 E	1,033 3,008 4,393	Bonnet. Alley. Parsons
3	38 56 48.84	76 13 17.88	S 63 47 W S 40 06 W S 23 34 E	N 63 47 E N 40 05 E N 23 34 W	1,440 3,742 2,052	Bonnet. Alley. Brian Reference Station.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 56 37.44	76 13 03.46	S 81 26 W S 54 19 W S 34 39 W	N 81 26 E N 54 17 E N 34 38 E	1,691 3,788 5,107	Bonnet. Alley. Parsons
5	38 56 34.10	76 13 05.89	S 85 04 W S 55 09 W S 34 47 W	N 85 03 E N 55 08 E N 34 46 E	1,614 3,671 4,978	Bonnet. Alley. Parsons
6	38 56 30.96	76 12 58.60	S 88 41 E S 58 10 W S 37 17 W	N 88 41 W N 58 09 E N 37 16 E	1,800 3,775 5,005	Bonnet. Alley. Parsons
7	38 56 42.20	76 12 53.22	S 78 01 W S 54 41 W S 36 02 W	N 78 01 E N 54 40 E N 36 01 E	1,985 4,101 5,394	Bonnet. Alley. Parsons
Thence from corner No. 7 along the mean low-water line of the shore to corner No. 8, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
8	38 56 34.64	76 12 50.76	S 85 32 W S 58 12 W S 38 16 W	N 85 31 E N 58 10 E N 38 14 E	2,012 4,015 5,230	Bonnet. Alley. Parsons
9	38 56 21.86	76 12 46.22	N 82 39 W S 64 30 W S 42 25 W	S 82 40 E N 64 28 E N 42 24 E	2,143 3,912 4,978	Bonnet. Alley. Parsons
Thence from corner No. 9 along the mean low-water line of the shore to corner No. 10, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
10	38 56 11.36	76 12 53.74	N 71 57 W S 68 13 W S 42 31 W	S 71 58 E N 68 12 E N 42 30 E	2,028 3,589 4,806	Bonnet. Alley. Parsons.
11	38 55 35.86	76 13 02.36	S 15 37 E N 35 19 E N 42 59 W	N 15 38 W S 35 19 W S 42 59 E	4,254 712 2,495	Green. Brian Reference Station. Bonnet.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SAW MILL CREEK.

(Prospect Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1.	38 54 13.35	76 13 26.94	N 42 52 W N 79 35 W S 53 46 E	S 42 53 E S 79 36 E N 53 46 W	3,613 2,414 2,223	Alley. Parsons. Green.
2	38 54 41.45	76 13 50.46	N 47 13 W S 73 46 W S 46 51 E	S 47 14 E N 73 45 E N 46 52 W	2,504 1,827 3,397	Alley. Parsons. Green.
3	38 55 25.69	76 13 46.50	N 83 51 W S 42 52 W S 31 36 E	S 83 52 E N 42 52 E N 31 35 W	1,954 2,732 4,497	Alley. Parsons. Green.
4	38 55 35.86	76 13 02.36	S 15 37 E N 35 19 E N 42 59 W	N 15 38 W S 35 19 W S 42 59 E	4,254 712 2,495	Green. Brian Reference Station. Bonnet.
5	38 55 28.16	76 12 22.94	N 36 43 W N 88 15 W S 62 49 W	S 36 44 E S 88 16 E N 62 47 E	1,049 4,146 4,565	Brian Reference Station. Alley. Parsons.
6	38 54 32.72	76 12 41.92	N 2 41 W S 86 32 W S 17 09 E	S 2 41 E N 86 30 E N 17 08 W	2,713 3,567 2,059	Brian Reference Station. Parsons. Green.

PARSONS ISLAND NARROWS.

(Eastern Bay—Chart No. 32.)

1.	38 54 41.66	76 15 05.88	S 47 18 E N 5 00 E N 44 15 W	N 47 18 W S 5 00 W S 44 15 E	437 1,701 1,452	Parsons Island Alley. Norman.	Water [Tank.]
2	38 55 19.95	76 15 06.88	N 23 25 E S 75 43 W S 12 22 E	S 23 25 W N 75 43 E N 12 22 W	439 1,018 1,626	Alley. Norman. Parsons Island	[Tank. Water]
3	38 55 19.18	76 15 02.16	N 6 40 E S 78 32 W S 8 09 E	S 6 40 W N 78 32 E N 8 09 W	432 1,134 1,578	Alley. Norman. Parsons Island	[Tank. Water]
Thence from corner No. 3 along the mean low water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.							
4	38 55 09.30	76 14 59.22	N 2 04 W N 84 49 W S 6 48 E	S 2 04 E S 84 49 E N 6 48 W	762 1,193 1,238	Alley. Norman. Parsons Island	[Tank. Water]
5	38 54 56.56	76 14 18.61	N 51 47 E N 42 39 W S 49 07 W	S 51 48 W S 42 39 E N 49 07 E	3,081 1,620 1,222	Brian Reference Station. Alley. Parsons Island	[Tank. Water]
6	38 54 44.00	76 14 34.13	N 50 32 E N 23 05 W S 53 51 W	S 50 33 W S 23 05 E N 53 51 E	3,666 1,755 638	Brian Reference Station. Alley. Parsons Island	[Tank. Water]
7	38 54 56.62	76 14 49.52	N 13 23 W N 69 39 W S 7 45 W	S 13 23 E S 69 40 E N 7 45 E	1,223 1,540 809	Alley. Norman. Parsons Island	[Tank. Water]

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BALD EAGLE.

(Eastern Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 53 29.64	76 14 33.38	N 18 02 W	S 18 02 E	2,612	Parsons.
			N 81 38 W	S 81 39 E	3,684	Needle.
			S 22 26 W	N 22 25 E	4,728	Dixon.
2	38 54 00.00	76 14 09.88	S 73 32 E	N 73 31 W	3,050	Green.
			N 29 52 E	S 29 53 W	4,397	Brian Reference Station.
			N 54 23 W	S 54 24 E	1,528	Parsons.
3	38 54 27.78	76 14 10.76	N 31 06 W	S 31 06 E	2,525	Alley.
			S 87 48 W	N 87 47 E	1,220	Parsons.
			S 58 34 E	N 58 33 W	3,455	Green.
4	38 54 27.88	76 13 57.24	N 37 34 W	S 37 34 E	2,723	Alley.
			S 88 10 W	N 88 10 E	1,576	Parsons.
			S 55 09 E	N 55 08 W	3,158	Green.
5	38 54 04.37	76 13 42.15	S 65 14 E	N 65 13 W	2,416	Green.
			N 21 43 E	S 21 43 W	3,946	Brian Reference Station.
			N 69 23 W	S 69 24 E	2,108	Parsons.
6	38 53 30.70	76 13 57.36	N 22 04 W	S 22 05 E	4,410	Alley.
			N 83 47 W	S 83 49 E	4,622	Needle.
			S 32 00 W	N 31 59 E	5,196	Dixon.

MILL HILL.

(Eastern Bay—Chart No. 32.)

1	38 53 38.92	76 12 38.14	S 73 10 E	N 73 10 W	530	Green.
			N 2 52 W	S 2 52 E	4,530	Brian Reference Station.
			N 66 25 W	S 66 26 E	3,993	Parsons.
2	38 53 43.94	76 13 10.82	S 76 44 E	N 76 43 W	1,406	Green.
			N 8 17 E	S 8 18 W	4,401	Brian Reference Station.
			N 62 58 W	S 62 59 E	3,142	Parsons.
3	38 53 50.80	76 13 31.74	S 73 57 E	N 73 56 W	1,998	Green.
			N 10 02 E	S 10 03 W	4,290	Brian Reference Station.
			N 61 57 W	S 61 56 E	2,546	Parsons.
4	38 54 13.35	76 13 26.94	N 42 52 W	S 42 53 E	3,613	Alley.
			N 79 35 W	S 79 36 E	2,414	Parsons.
			S 53 46 E	N 53 46 W	2,223	Green.
5	38 54 32.72	76 12 41.92	N 2 41 W	S 2 41 E	2,713	Brian Reference Station.
			S 86 32 W	N 86 30 E	3,567	Parsons.
			S 17 09 E	N 17 08 W	2,059	Green.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GREENWOOD CREEK.

(Eastern Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 53 11.96	76 12 10.20	N 16 53 W S 52 48 W S 4 05 W	S 16 53 E N 52 46 E N 4 05 E	790 5,741 4,121	Green. Pearson. Benn.
2	38 53 20.70	76 12 13.48	N 17 13 W S 49 59 W S 2 41 W	S 17 14 E N 49 58 E N 2 41 E	482 5,858 4,410	Green. Pearson. Benn.
3	38 53 22.08	76 12 09.06	N 32 02 W S 50 22 W S 4 09 W	S 32 02 E N 50 20 E N 4 09 E	489 5,978 4,464	Green. Pearson. Benn.
4	38 53 13.24	76 12 05.60	N 26 12 W S 53 11 W S 5 42 W	S 26 12 E N 53 09 E N 5 42 E	794 5,865 4,174	Green. Pearson. Benn.

PROSPECT POINT.

(Eastern Bay—Chart No. 32.)

1	38 52 49.46	76 12 22.68	N 3 46 E S 57 25 W S 0 36 E	S 3 46 W N 57 23 E N 0 36 W	1,518 5,037 3,353	Green. Pearson. Benn.
2	38 52 55.00	76 12 29.68	N 12 05 E S 54 28 W S 3 34 E	S 12 05 W N 54 26 E N 3 34 W	1,357 4,989 3,545	Green. Pearson. Benn.
3	38 53 06.78	76 12 15.16	N 6 03 W S 53 25 W S 2 22 W	S 6 03 E N 53 23 E N 2 22 E	936 5,533 3,940	Green. Pearson. Benn.
4	38 53 01.44	76 12 08.54	N 13 49 W S 55 59 W S 5 08 W	S 13 49 E N 55 57 E N 5 08 E	1,143 5,571 3,771	Green. Pearson. Benn.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BUGBY.

(Eastern Bay—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 52 07.64	76 14 09.20	S 26 44 E S 55 41 E N 44 50 E	N 26 43 W N 55 40 W S 44 51 W	4,554 3,444 4,123	Herr. Benn. Green.
2	38 52 36.14	76 14 11.60	S 31 14 W S 45 03 E N 56 32 E	N 31 14 E N 45 02 W S 56 33 W	2,647 4,109 3,561	Pearson. Benn. Green.
3	38 53 43.04	76 13 10.82	S 76 44 E N 8 17 E N 62 58 W	N 76 43 W S 8 18 W S 62 59 E	1,406 4,401 3,142	Green. Brian Reference Station. Parsons.
4	38 53 38.92	76 12 38.14	S 73 10 E N 2 52 W N 66 25 W	N 73 10 W S 2 52 E S 66 26 E	530 4,530 3,993	Green. Brian Reference Station. Parsons.
5	38 52 53.04	76 12 51.34	N 31 32 E S 50 55 W S 12 50 E	S 31 32 W N 50 54 E N 12 50 W	1,635 4,494 3,562	Green. Pearson. Benn.
6	38 52 31.38	76 12 21.20	N 1 38 E S 63 51 W S 0 04 W	S 1 38 W N 63 49 E N 0 04 E	2,125 4,771 2,742	Green. Pearson. Benn.
7	38 52 18.46	76 13 01.34	S 62 40 W S 24 35 E N 23 36 E	N 62 38 E N 24 35 W S 23 37 W	3,630 2,536 2,793	Pearson. Benn. Green.
8	38 52 08.96	76 13 31.06	S 61 07 W S 42 48 E N 33 26 E	N 61 06 E N 42 47 W S 33 27 W	2,788 2,707 3,451	Pearson. Benn. Green.

COFFEE.

(Eastern Bay—Chart No. 32.)

1	38 51 07.52	76 13 33.22	S 28 19 E N 87 25 E N 21 35 E	N 28 19 W S 87 26 W S 21 36 W	2,317 1,897 5,325	Herr. Benn. Green.
2	38 52 08.96	76 13 31.06	S 61 07 W S 42 48 E N 33 26 E	N 61 06 E N 42 47 W S 33 27 W	2,788 2,707 3,451	Pearson. Benn. Green.
3	38 52 18.46	76 13 01.34	S 62 40 W S 24 35 E N 23 36 E	N 62 38 E N 24 35 W S 23 37 W	3,630 2,536 2,793	Pearson. Benn. Green.
4	38 52 04.58	76 12 33.48	N 7 14 E S 73 09 W S 9 53 E	S 7 14 W N 73 07 E N 9 53 W	3,052 4,137 1,867	Green. Pearson. Benn.
5	38 51 43.28	76 12 45.24	N 10 30 E S 82 30 W S 29 22 E	S 10 30 W N 82 28 E N 29 22 W	3,810 3,681 1,286	Green. Pearson. Benn.
6	38 51 29.86	76 12 20.80	N 0 41 E S 89 37 W S 1 12 W	S 0 41 W N 89 35 E N 1 12 E	4,199 4,293 668	Green. Pearson. Benn.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PERSIMMON TREE.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 50 39.24	76 12 20.10	S 35 12 W S 75 46 E N 71 09 E	N 35 11 E N 75 45 W S 71 09 W	3,530 734 778	Sara. Frank. James.
Thence along county boundary as delineated on Chart No. 32 to corner No. 2.						
2	38 50 48.30	76 13 17.28	S 9 22 W S 77 40 E N 63 33 E	N 9 22 E N 77 39 W S 63 34 W	3,234 2,271 1,648	Sara. Frank. Benn.
3	38 51 07.52	76 13 33.22	S 28 19 E N 87 25 E N 21 35 E	N 28 19 W S 87 26 W S 21 36 W	2,317 1,897 5,325	Herr. Benn. Green.
4	38 51 29.86	76 12 20.80	N 0 41 E S 89 37 W S 1 12 W	S 0 41 W N 89 35 E N 1 12 E	4,199 4,203 668	Green. Pearson. Benn.
5	38 51 19.38	76 12 26.20	N 2 25 E N 85 32 W S 22 13 E	S 2 25 W S 85 33 E N 22 13 W	4,556 4,164 340	Green. Pearson. Benn.

SHIPPEN HOLE.

(Wye River—Chart No. 32.)

1	38 51 01.04	76 12 07.44	S 32 34 W S 39 44 E N 40 34 E	N 32 33 E N 39 44 W S 40 35 W	2,161 629 1,374	Herr. James. Bruffs.
2	38 51 05.78	76 12 14.70	S 26 07 W S 42 41 E N 50 50 E	N 26 07 E N 42 41 W S 50 51 W	2,207 875 1,399	Herr. James. Bruffs.
3	38 51 18.46	76 12 00.60	S 29 09 W S 56 06 E N 57 24 E	N 29 08 E N 56 05 W S 57 24 W	2,758 819 840	Herr. Law. Bruffs.
4	38 51 38.88	76 11 55.38	S 12 54 W S 67 59 E N 10 28 W	N 12 54 E N 67 59 W S 10 28 E	647 620 113	Hough. Bruffs. Won.
5	38 51 40.30	76 11 46.76	N 13 13 E N 75 39 W S 28 43 W	S 13 13 W S 75 39 E N 28 43 E	969 256 773	Nose. Won. Hough.
6	38 51 11.30	76 11 56.38	S 33 52 W S 69 15 E N 40 47 E	N 33 52 E N 69 15 W S 40 48 W	2,610 607 921	Herr. Law. Bruffs.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MILLS.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 51 38.88	76 11 55.38	S 12 54 W S 67 59 E N 10 28 W	N 12 54 E N 67 59 W S 10 28 E	647 620 113	Hough. Bruffis. Won.
2	38 51 50.10	76 11 57.08	S 5 11 E S 45 25 E N 38 52 E	N 5 11 W N 45 25 W S 38 52 W	268 871 786	Won. Bruffis Nose.
3	38 52 03.76	76 11 36.74	N 47 08 E N 15 43 W S 35 08 W	S 47 08 W S 15 43 E N 35 08 E	553 157 890	Snout. Nose. Won.
4	38 52 12.66	76 11 33.18	N 2 06 E S 42 38 W S 7 58 E	S 2 06 W N 42 38 E N 7 58 W	604 201 1,332	Stop. Nose. Shaw.
5	38 51 51.30	76 11 24.38	S 4 30 W S 86 02 E N 5 43 E	N 4 30 E N 86 02 W S 5 44 W	601 390 801	Shaw. South. Snout.
6	38 51 40.30	76 11 46.76	N 13 13 E N 75 39 W S 28 43 W	S 13 13 W S 75 39 E N 28 43 E	969 256 773	Nose. Won. Hough.

HOBBS.

(Wye River—Chart No. 32.)

1	38 52 03.76	76 11 36.74	N 47 08 E N 15 43 W S 35 08 W	S 47 08 W S 15 43 E N 35 08 E	553 157 890	Snout. Nose. Won.
2	38 52 22.34	76 11 37.50	S 2 44 W S 59 35 E N 27 21 E	N 2 44 E N 59 35 W S 27 21 W	476 494 206	Nose. Snout. Stop.
3	38 52 28.04	76 11 29.30	S 25 22 E N 76 31 E N 48 32 W	N 25 22 W S 76 31 W S 48 32 E	489 522 107	Snout. Leaven. Stop.
4	38 52 55.02	76 11 42.08	S 12 01 E N 73 07 E N 22 20 E	N 12 01 W S 73 07 W S 22 20 W	406 2,615 451	Orb. Twixt. Piney.
5	38 52 51.05	76 11 33.48	N 75 02 E N 5 46 W S 28 29 W	S 75 02 W S 5 46 E N 28 29 E	425 553 299	Star. Piney. Orb.
6	38 52 28.58	76 11 22.98	N 77 58 W S 5 20 W N 73 07 E	S 77 58 E N 5 20 E S 73 07 W	253 463 357	Stop. Snout. Leaven.
7	38 52 12.66	76 11 33.18	N 2 06 E S 42 38 W S 7 58 E	S 2 06 W N 42 38 E N 7 58 W	604 201 1,332	Stop. Nose. Shaw.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BAXTERS HOLLOW.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 52 51.05	76 11 33.48	N 75 02 E	S 75 02 W	425	Star.
			N 5 46 W	S 5 46 E	553	Piney.
			S 28 29 W	N 28 29 E	299	Orb.
2	38 52 55.02	76 11 42.08	S 12 01 E	N 12 01 W	406	Orb.
			N 73 07 E	S 73 07 W	2,615	Twixt.
			N 22 20 E	S 22 20 W	451	Piney.
3	38 53 15.04	76 11 25.26	S 46 28 W	N 46 28 E	375	Piney.
			N 87 39 E	S 87 40 W	2,060	Twixt.
			N 67 42 E	S 67 42 W	378	Ferry.
4	38 53 18.30	76 11 10.28	N 64 25 E	S 64 25 W	1,214	Owe.
			N 52 52 W	S 52 52 E	56	Ferry.
			S 0 09 W	N 0 09 E	386	Darce.
5	38 53 14.48	76 11 08.88	S 8 23 W	N 8 23 E	260	Darce.
			S 86 45 E	N 86 44 W	1,270	Wide.
			N 26 37 W	S 26 37 E	182	Ferry.
6	38 53 09.78	76 11 24.96	S 73 49 W	N 73 49 E	292	Piney.
			N 82 43 E	S 82 44 W	2,068	Twixt.
			N 46 51 E	S 46 51 W	469	Ferry.

PACA.

(Wye River—Chart No. 32.)

1	38 53 13.58	76 10 38.88	S 74 41 W	N 74 41 E	860	Darce.
			S 84 59 E	N 84 59 W	479	Wide.
			N 21 21 E	S 21 21 W	734	Owe.
2	38 53 14.48	76 11 08.88	S 8 23 W	N 8 23 E	260	Darce.
			S 86 45 E	N 86 44 W	1,270	Wide.
			N 26 37 W	S 26 37 E	182	Ferry.
3	38 53 18.30	76 11 10.28	N 64 25 E	S 64 25 W	1,214	Owe.
			N 52 52 W	S 52 52 E	56	Ferry.
			S 0 09 W	N 0 09 E	386	Darce.
4	38 53 25.72	76 10 35.20	N 77 24 W	S 77 25 E	993	Ferry.
			S 40 07 E	N 40 06 W	589	Wide.
			N 31 50 E	S 31 50 W	323	Owe.
5	38 53 15.28	76 10 31.94	S 71 22 E	N 71 22 W	311	Wide.
			N 7 39 E	S 7 39 W	631	Owe.
			N 82 41 W	S 82 41 E	1,064	Ferry.

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BRYAN.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 53 15.28	76 10 31.94	S 71 22 E N 7 39 E N 82 41 W	N 71 22 W S 7 39 W S 82 41 E	311 631 1,064	Wide. Owe. Ferry.
2	38 53 25.72	76 10 35.20	N 77 24 W S 40 07 E N 31 50 E	S 77 25 E N 40 06 W S 31 50 W	993 589 323	Ferry. Wide. Owe.
3	38 53 28.30	76 10 22.88	S 5 52 E N 47 53 E N 39 38 W	N 5 52 W S 47 53 W S 39 38 E	541 565 243	Wide. Aller. Owe.
4	38 53 46.42	76 10 23.88	N 68 20 W S 16 50 W N 90 00 E	S 68 20 E N 16 50 E S 90 00 W	210 443 231	Hook. Owe. Chin.
5	38 53 38.26	76 10 14.86	N 78 16 E N 1 52 W S 67 51 W	S 78 16 W S 1 52 E N 67 51 E	212 276 396	Aller. Chin. Owe.
6	38 53 18.40	76 10 18.66	N 27 03 W S 15 18 W S 84 33 E	S 27 03 E N 15 18 E N 84 33 W	585 212 305	Owe. Wide. Twist.

WYE ISLAND.

(Wye River—Chart No. 32.)

1	38 52 57.94	76 10 38.40	N 43 43 E N 11 52 E N 70 22 W	S 43 44 W S 11 52 W S 70 22 E	671 1,237 893	Wide. Owe. Darce.
2	38 53 08.74	76 11 10.50	N 6 13 W N 79 55 E S 4 14 E	S 6 13 E S 79 56 W N 4 14 W	359 1,696 63	Ferry. Twist. Darce.
3	38 53 11.22	76 11 09.78	N 11 59 W N 82 39 E S 5 30 W	S 11 59 E S 82 39 W N 5 30 E	278 1,664 149	Ferry. Twist. Darce.
4	38 53 13.18	76 10 57.72	S 88 20 E N 61 13 W S 57 14 W	N 88 20 W S 61 13 E N 57 14 E	974 429 395	Wide. Ferry. Darce.
5	38 53 08.52	76 10 42.28	N 77 12 E N 65 05 W S 85 37 W	S 77 12 W S 65 05 E N 85 37 E	582 863 741	Wide. Ferry. Darce.
6	38 53 13.58	76 10 38.88	S 74 41 W S 84 59 E N 21 21 E	N 74 41 E N 84 59 W S 21 21 W	860 479 734	Darce. Wide. Owe.
7	38 53 15.28	76 10 31.94	S 71 22 E N 7 39 E N 82 41 W	N 71 22 W S 7 39 W S 82 41 E	311 631 1,064	Wide. Owe. Ferry.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

DRUM POINT.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 52 56.70	76 11 21.80	S 52 03 E	N 52 03 W	131	Star.
			N 43 29 E	S 43 29 W	207	Twixt.
			N 45 17 W	S 45 18 E	512	Piney.
2	38 52 56.66	76 11 29.36	S 29 04 W	N 29 04 E	517	Orb.
			S 75 19 E	N 75 19 W	313	Star.
			N 24 27 W	S 24 27 E	397	Piney.
3	38 53 09.32	76 11 21.10	N 35 34 E	S 35 34 W	413	Ferry.
			S 80 14 W	N 80 14 E	387	Piney.
			S 9 31 E	N 9 31 W	513	Star.
4	38 53 11.22	76 11 09.78	N 11 59 W	S 11 59 E	278	Ferry.
			N 82 39 E	S 82 39 W	1,664	Twixt.
			S 5 30 W	N 5 30 E	149	Darce.
5	38 53 08.74	76 11 10.50	N 6 13 W	S 6 13 E	359	Ferry.
			N 79 55 E	S 79 56 W	1,696	Stop.
			S 4 14 E	N 4 14 W	63	Darce.

WYE RIVER MIDDLEGROUND.

(Wye River—Chart No. 32.)

1	38 52 28.26	76 11 18.82	N 1 37 E	S 1 37 W	879	Star.
			N 79 55 W	S 79 55 E	362	Stop.
			S 8 26 W	N 8 26 E	454	Snout.
2	38 52 38.54	76 11 26.36	S 29 06 W	N 29 06 E	325	Stop.
			S 61 38 E	N 61 37 W	489	Leaven.
			N 22 48 E	S 22 48 W	577	Star.
3	38 52 56.66	76 11 29.36	S 29 04 W	N 29 04 E	517	Orb.
			S 75 19 E	N 75 19 W	313	Star.
			N 24 27 W	S 24 27 E	397	Piney.
4	38 52 56.70	76 11 21.80	S 52 03 E	N 52 03 W	131	Star.
			N 43 29 E	S 43 29 W	207	Twixt.
			N 45 17 W	S 45 18 E	512	Piney.
5	38 52 44.36	76 11 14.38	N 15 22 W	S 15 22 E	348	Star.
			S 86 45 W	N 86 44 E	646	Orb.
			S 14 57 E	N 14 57 W	444	Leaven.
6	38 52 28.52	76 11 13.88	N 43 48 E	S 43 48 W	147	Leaven.
			N 83 36 W	S 83 36 E	490	Stop.
			S 23 15 W	N 23 16 E	499	Snout.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HESS.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 51 41.26	76 11 04.68	N 84 54 W	S 84 54 E	728	Edward.
			N 22 44 W	S 22 44 E	338	South.
			S 65 16 W	N 65 16 E	624	Shaw.
2	38 51 44.72	76 11 17.94	N 48 21 E	S 48 21 W	293	South.
			N 34 09 W	S 34 09 E	959	Nose.
			N 29 53 W	S 29 53 E	435	Shaw.
3	38 52 15.60	76 11 30.14	S 41 12 W	N 41 12 E	329	Nose.
			S 84 26 E	N 84 26 W	233	Snout.
			N 6 45 W	S 6 45 E	493	Stop.
4	38 52 18.68	76 11 19.94	N 30 51 E	S 30 51 W	509	Leaven.
			N 40 14 W	S 40 14 E	506	Stop.
			S 16 23 W	N 16 23 E	131	Snout.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 51 50.72	76 11 07.52	S 82 24 W	N 82 24 E	57	South.
			S 40 18 W	N 40 17 E	761	Shaw.
			S 72 22 E	N 72 22 W	840	Edward.

STONE WHARF.

(Wye River—Chart No. 32.)

1	38 51 50.80	76 10 58.08	N 42 27 E	S 42 27 W	731	Flat.
			S 88 06 W	N 88 06 E	305	South.
			S 51 48 W	N 51 48 E	943	Shaw.
2	38 51 53.74	76 11 02.82	S 58 41 W	N 58 41 E	210	South.
			S 62 13 E	N 62 13 W	764	Edward.
			N 54 34 E	S 54 34 W	759	Flat.
3	38 52 04.80	76 10 53.60	S 41 14 W	N 41 14 E	642	South.
			S 30 42 E	N 30 43 W	849	Edward.
			N 79 54 E	S 79 54 W	381	Flat.
4	38 52 04.54	76 10 45.78	S 53 01 W	N 53 01 E	787	South.
			S 17 28 E	N 17 28 W	756	Edward.
			N 65 53 E	S 65 53 W	185	Flat.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

RACE HORSE (QUEEN ANNES COUNTY).

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
1	° / ' "	° / ' "	° / ' "	° / ' "	<i>Yards.</i>	
	38 51 41.04	76 10 59.44	N 82 59 E S 40 06 W S 70 13 W	S 83 00 W S 40 06 E N 70 12 E	592 417 749	Edward. South. Shaw.
2	38 51 54.38	76 10 51.82	S 45 39 E N 38 09 E S 74 28 W	N 45 39 W S 38 09 W N 74 27 E	540 531 488	Edward. Flat. South.
3	38 51 58.16	76 10 41.72	N 11 59 E S 70 39 W S 13 20 E	S 11 59 W N 70 39 E N 13 20 W	297 780 519	Flat. South. Edward.
4	38 51 56.76	76 10 34.74	S 8 00 W N 57 01 E N 19 54 W	N 8 00 E S 57 02 W S 19 54 E	463 753 360	Edward. Albert. Flat.
Thence along county boundary as delineated on Chart No. 32 to corner No. 1.						

WHETSTONE.

(Wye River—Chart No. 32.)

1	38 51 55.86	76 10 09.00	S 7 36 W N 60 57 E N 5 59 W	S 7 36 E N 60 57 W S 5 59 E	503 572 443	Lloyd. Cousin. Albert.
2	38 52 01.18	76 10 15.58	N 81 42 E S 25 59 E N 73 15 W	S 81 43 W S 25 59 W S 73 15 E	680 291 655	Cousin. Albert. Flat.
3	38 52 06.62	76 10 07.68	N 39 44 E S 46 06 W S 6 42 W	S 39 44 W S 46 06 E N 6 42 E	424 113 867	Baldwins. Albert. Lloyd.
4	38 52 17.26	76 10 09.48	N 28 08 E S 74 46 W S 6 48 W	S 28 08 W N 74 46 E N 6 48 E	396 30 282	Attila. Le Seur. Albert.
5	38 52 27.72	76 10 00.40	N 7 52 E S 85 38 W S 36 37 W	S 7 52 W N 85 38 E N 36 37 E	385 52 449	Tobine. Attila. Le Seur.
6	38 52 26.50	76 09 57.10	S 1 19 W S 85 52 E N 41 24 E	N 1 19 E N 85 52 W S 41 24 W	344 163 490	Baldwins. Sylvia. Gusta.
7	38 52 20.62	76 10 01.72	N 4 25 W S 62 33 W S 37 57 E	S 4 25 E N 62 33 E N 37 57 W	236 262 185	Attila. Le Seur. Baldwins.
8	38 52 10.38	76 10 01.42	S 54 43 E N 28 00 E N 47 03 W	N 54 43 W S 28 00 W S 47 04 E	367 226 329	Cousin. Baldwins. Le Seur.
Thence along county boundary as delineated on Chart No. 32 to corner No. 1.						

Survey of Oyster Bars, Queen Annes County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MELVIN.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "		
1	38 52 26.50	76 09 57.10	S 1 19 W S 85 52 E N 41 24 E	N 1 19 E N 85 52 W S 41 24 W	Yards. 344 163 490	Baldwms. Sylvia. Gusta.
2	38 52 27.72	76 10 00.40	N 7 52 E S 85 38 W S 36 37 W	S 7 52 W N 85 38 E N 36 37 E	385 52 449	Tobine. Attila. Le Seur.
3	38 52 39.03	76 09 58.40	S 15 18 W S 81 14 E N 6 21 W	N 15 18 E N 81 14 W S 6 21 E	400 362 458	Attila. Gusta. Sang.
4	38 52 59.52	76 09 50.37	S 48 08 W S 28 33 E S 84 55 E	N 48 08 E N 28 33 W N 84 55 W	352 533 327	Sang. Nodim. Go.
5	38 52 52.64	76 09 45.28	S 89 31 W S 26 53 E N 43 23 E	N 89 31 E N 26 53 W S 43 23 W	396 265 280	Sang. Nodim. Go.
Thence along county boundary as delineated on Chart No. 32 to corner No. 1.						

DIVIDING.

(Wye River—Chart No. 32.)

1	38 52 52.18	76 09 12.82	N 81 40 E N 5 04 E N 71 47 W	S 81 40 W S 5 04 W S 71 47 E	382 226 699	Deck. Divide. Go.
2	38 52 52.48	76 09 30.12	N 65 37 E N 44 54 W S 50 31 W	S 65 37 W S 44 54 E N 50 31 E	523 294 362	Divide. Go. Nodim.
3	38 52 52.64	76 09 45.28	S 89 31 W S 26 53 E N 43 23 E	N 89 31 E N 26 53 W S 43 23 W	396 265 280	Sang. Nodim. Go.
4	38 52 59.52	76 09 50.37	S 48 08 W S 28 33 E S 84 55 E	N 48 08 E N 28 33 W N 84 55 W	352 533 327	Sang. Nodim. Go.
5	38 52 58.74	76 09 37.94	N 85 25 W S 9 29 W N 89 36 E	S 85 25 E N 9 29 E S 89 36 W	329 448 682	Turn. Nodim. Divide.
6	38 52 57.50	76 09 13.60	S 60 48 W S 19 34 E N 41 06 E	N 60 47 E N 19 34 W S 41 06 W	819 460 62	Nodim. Quarter. Divide.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SHAWNS WHARF.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 52 52.18	76 09 12.82	N 81 40 E	S 81 40 W	382	Deck.
			N 5 04 E	S 5 04 W	226	Divide.
			N 71 47 W	S 71 47 E	699	Go.
2	38 52 57.50	76 09 13.60	S 60 48 W	N 60 47 E	819	Nodim.
			S 19 34 E	N 19 34 W	460	Quarter.
			N 41 06 E	S 41 06 W	62	Divide.
3	38 53 03.94	76 09 00.30	N 78 37 W	S 78 37 E	67	Princess.
			S 7 58 E	N 7 57 W	344	Deck.
			S 83 41 E	N 83 41 W	515	Philip.
4	38 53 01.38	76 08 39.78	N 44 04 W	S 44 04 E	42	Philip.
			S 49 04 W	N 49 04 E	441	Matter.
			S 43 34 E	N 43 34 W	645	Whale.
5	38 52 57.70	76 08 40.66	N 2 04 W	S 2 04 E	154	Philip.
			S 62 01 W	N 62 01 E	351	Matter.
			S 53 44 E	N 53 44 W	580	Whale.
6	38 52 59.30	76 08 55.38	N 88 09 W	S 88 09 E	440	Divide.
			S 23 55 W	N 23 55 E	202	Deck.
			N 75 22 E	S 75 23 W	206	Philip.

Thence along county boundary as delineated on Chart No. 32 to corner No. 1.

GRANARY POINT.

(Wye River—Chart No. 32.)

1	38 52 51.88	76 08 22.72	N 62 21 E	S 62 21 W	242	Morn.
			N 6 15 E	S 6 15 W	112	Granary.
			N 87 41 W	S 87 41 E	784	Matter.
2	38 52 53.94	76 08 22.64	N 81 44 E	S 81 45 W	643	Bush.
			N 78 35 E	S 78 35 W	217	Morn.
			S 2 02 W	N 2 02 E	217	Whale.
3	38 52 54.20	76 08 10.39	S 55 46 W	N 55 46 E	400	Whale.
			S 14 44 W	N 14 44 E	291	Chew.
			N 75 04 E	S 75 04 W	325	Bush.
4	38 52 51.88	76 08 10.46	N 44 07 W	S 44 07 E	155	Morn.
			N 70 25 W	S 70 26 E	330	Granary.
			N 88 21 W	S 88 22 E	1,106	Matter.

APPENDICES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *
SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

Survey of Oyster Bars, Queen Annes County, Md.

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved March 4, 1909.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and ten, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and ten, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved June 25, 1910.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eleven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eleven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, fifteen thousand dollars.

Survey of Oyster Bars, Queen Annes County, Md.

171

[Act of Congress approved March 4, 1911.]

AN ACT Making appropriation for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and twelve, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and twelve, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, thirteen thousand dollars.

[Act of the Legislature of Maryland approved April 2, 1906.]

AN ACT To establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That the following sections be, and they are hereby, added to article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis, and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie. * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section.

* * * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the same to the Clerks of the Circuit court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed other than those embraced in the survey authorized by this Act, and that all areas of the Ches-

peake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks shall be construed in all the courts of the State to be barren bottoms and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act; provided, that the said survey and report shall not be construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act.

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the survey, is as follows:

AN ACT Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or leveling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.¹ *And be it enacted,* That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses (to be by them sworn or affirmed and examined), shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted,* That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first

¹ Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from Second Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland, had a twofold object in view.

1. To encourage an industry in oyster culture upon the barren bottoms beneath the tidewaters of the State.

2. To prevent the leasing of natural oyster bars for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

DEFINITION OF A NATURAL OYSTER BAR.

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoying them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the Commission."

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturists, may be made to yield a greater number of oysters than they now produce."

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

The definition of a natural oyster bar which very nearly approaches a reasonable and satisfactory compromise between the views of the subject held by *oystermen* on one hand and by *oyster culturists* on the other is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Todd v. Job T. Moore.

This definition has been adopted by the Shell Fish Commission as the basis for the determination of the status of the various oyster bottoms surveyed, and is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be

possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them, and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the act of assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and can not be located or appropriated by any individual.

APPLICATION OF DEFINITION.

Before this definition may be of use in determining, accurately and scientifically, the status of an oyster ground, its central idea, "livelihood," must be expanded into accurately determinable factors, and these factors must be confined into a practical scheme of investigating the condition of the ground under consideration.

Stated briefly, a *livelihood* is represented by a *sum of money* obtained from the sale, at a fixed *price*, of a certain *quantity of oysters* gathered in a given *time* from an allotted *area* of ground.

Knowing the value of each of these factors it becomes possible to calculate the number of oysters an oyster ground must produce per square yard in order that oystermen may secure a livelihood by working upon it.

NOTE.—The factors into which the commission resolved the livelihood problem, the value assigned to each factor, and the scheme devised for practical use in examining and applying the definition to oyster bottoms are given in outline in their second report under the heading of the preceding extract, and in detail in their first report on pages 32 to 69.

APPENDIX C.—SUMMARY OF THE PARTICULAR SURVEYING OPERATIONS WHICH CONSTITUTE AN "OYSTER SURVEY" AS NOW BEING CARRIED ON IN MARYLAND.

Explanation.—A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest practical accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Triangulation survey.—Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a framework or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

Topographic survey.—The technical records which establish the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned

as to the leasable bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

Hydrographic survey.—In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Necessary foundation for an oyster survey.—Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Special surveys and investigations pertaining to oysters.—Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations¹ making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding boat party in addition to the usual hydrographic work.² This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

The special oyster investigations³ consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affects the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

Preparation of results.—The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.⁴ This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for publication by the Government, the preparation of that part of the annual report of the commission covering the special oyster surveys and investigations, the making of the leasing charts and finished projections, and finally the filing of the oyster charts and records with the courts and the commission, thus opening a county for oyster culture.

Summary.—From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² See pp. 104 to 123 of First Annual Report of Maryland Shell Fish Commission.

³ See pp. 30 to 67 and 129 to 199 of First Annual Report of Maryland Shell Fish Commission.

⁴ No mention is made here of the large amount of administrative work of the commission, which is greatly complicated and increased by the effect of the oyster-survey operations on many thousands of people whose interests are more or less involved; or of the large amount of survey work involved in the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

APPENDIX D.—STATISTICS OF RESULTS OF THE COMBINED OYSTER SURVEY OPERATIONS OF THE GOVERNMENT AND STATE.¹

Operations	Anne Arundel County	Somerset County	Wicomico County	Worcester County	Calvert County	Charles County
Beginning of field work.....	June 29, 1906	May 2, 1907	Aug. 27, 1907	Nov. 8, 1907	May 2, 1908	Aug. 18, 1908
Filing of certified charts and reports.....	June 20, 1907	July 1, 1908	Dec. 1, 1908	Apr. 12, 1909	Dec. 14, 1909	Jan. 27, 1911
Natural oyster bars surveyed and delineated.....	91	37	15	28	41	15
Acres of natural oyster bars.....	33,666	27,506	2,038	1,655	12,303	2,285
Crab bottoms surveyed and delineated.....		54				
Acres of crab bottoms.....		32,108				
Clam beds surveyed and delineated.....		3				
Acres of clam beds.....		506				
Boundary buoys located and planted.....	362	154	53	108	149	51
Triangulation landmarks established.....	123	86	30	48	78	42
Miles of shore line covered by triangulation.....	110	125	46	95	95	32
Square miles of water covered by triangulation.....	220	375	44	110	157	20
Miles of examination of shell bottom with chain apparatus.....	369	296	58	63	250	38
Oyster-investigation stations occupied.....	440	679	162	147	667	113
Tide stations established.....	4	3	1	1	2	1
Number of soundings over shell bottoms.....	37,049	17,904	3,387	3,649	11,292	1,631
Square miles covered by soundings and chain apparatus.....	58	47	3	3	30	4
Projections prepared and plotted.....	9	13	2	5	8	3
Leasing charts prepared.....	13	12	2	3	5	2
Oyster charts published.....	4	6	2	3	5	1
Reports published.....	2	2	2	2	2	2
Progress maps published.....	2	2	2	2	2	2

Operations	St. Marys County	Baltimore County	Kent County	Queen Annes County	Total ²
Beginning of field work.....	May 2, 1908	Apr. 14, 1909	Apr. 14, 1909	Apr. 14, 1909	
Filing of certified charts and reports.....	July 6, 1911	Aug. 10, 1911	Oct. 5, 1911	Nov. 29, 1911	
Natural oyster bars surveyed and delineated.....	124	3	64	98	316
Acres of natural oyster bars.....	25,778	3,010	12,809	24,721	³ 145,831
Crab bottoms surveyed and delineated.....					54
Acres of crab bottoms.....					32,108
Clam beds surveyed and delineated.....					3
Acres of clam beds.....					306
Boundary buoys located and planted.....	513	13	211	340	1,954
Triangulation landmarks established.....	238	15	147	199	765
Miles of shore line covered by triangulation.....	160	12	110	240	840
Square miles of water covered by triangulation.....	180	50	130	500	1,472
Miles of examination of shell bottom with chain apparatus.....	400	33	164	288	1,959
Oyster-investigation stations occupied.....	1,472	64	1,151	1,949	6,844
Tide stations established.....	7	1	3	3	25
Number of soundings over shell bottoms.....	19,334	1,080	8,123	13,880	117,339
Square miles covered by soundings and chain apparatus.....	57	6	21	47	276
Projections prepared and plotted.....	15	4	10	12	58
Leasing charts prepared.....	10	1	4	11	62
Oyster charts published.....	8	1	3	4	32
Reports published.....	2	2	2	2	13
Progress maps published.....	2	1	1	1	12

¹ These statistics do not include the large amount of triangulation, topography, and hydrography resulting from previous work of the Coast and Geodetic Survey, which was utilized in the preparation of the published oyster charts and records. Work in Talbot and Dorchester counties has been finished, but final statistics of results will not be published until these counties are opened for oyster culture.

² Less quantities covered by statistics of more than 1 county.

³ Total area of natural oyster bars of Connecticut is 5,770 acres.

COAST AND GEODETIC SURVEY PROGRESS MAP QUEEN ANNES COUNTY MARYLAND

To accompany report of work of United States
Coast and Geodetic Survey in cooperation
with the Maryland Shell Fish Commission

- Landmarks (Coast Survey Triangulation Stations)
- Waters contiguous to county
- Waters within territorial limits of county
- Limits of projections on file at Washington
- Limits of charts published by Coast and Geodetic Survey

CHART No. 31

CHART No. 29

CHART No. 30

CHART No. 32

—Special Note—
For Descriptions of Triangulation
Stations in Kent County and Talbot
County the locations of which are shown
on this map but which are not described
in the accompanying publications,
the corresponding publications for
these two counties

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

ST. MARYS COUNTY MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND
REPORT OF WORK OF UNITED STATES COAST
AND GEODETIC SURVEY IN COOPERATION
WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND
SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1911

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, July 6, 1911.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, together with certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shell fish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, 1909, 1910, and 1911.

Respectfully,

O. H. TITTMANN, *Superintendent.*

TO HON. CHARLES NAGEL,
Secretary of Commerce and Labor.

CERTIFICATION.

BALTIMORE, MD., *July 5, 1911.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in St. Marys County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,

Chief of Coast and Geodetic Survey Party,

Assistant, Coast and Geodetic Survey.

Examined and certified to be correct.

BALTIMORE, MD., *July 5, 1911.*

WALTER J. MITCHELL,

CASWELL GRAVE,

BENJAMIN K. GREEN,

Maryland Shell Fish Commission.

SWEPSON EARLE,

Hydrographic Engineer.

NOTE.—Certified copies of this publication and of the charts of the natural oyster bars of St. Marys County were filed in the office of the clerk of the circuit court of St. Marys County and in the office of the board of shell fish commissioners on July 6, 1911.

CONTENTS.

	Page.
PROGRESS MAP.....follows	203
LETTER OF SUBMITTAL.....	3
CERTIFICATION.....	5
INTRODUCTION:	
Publications.....	17
Cooperation of the Coast and Geodetic Survey.....	18
Cooperation of the Bureau of Fisheries.....	18
General statement of work of Coast and Geodetic Survey.....	18
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions.....	20
Organization and equipment.....	20
Chronological statement of work.....	21
Statistics.....	22
General remarks.....	23
CHARTS AND MAPS:	
Charts of natural oyster bars.....	24
Leasing charts.....	25
Projections.....	26
Progress maps.....	26
BOUNDARIES OF THE COUNTY WATERS:	
Waters within territorial limits of county.....	27
Waters contiguous to county.....	29
LANDMARKS (UNITED STATES COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation.....	30
Method of describing triangulation stations.....	30
Descriptions of triangulation stations in county and adjacent waters—	
<i>Chart No. 19 (Upper Patuxent River)—</i>	
Prince.....	33
Leitch.....	33
Fodder.....	34
Buena.....	34
Teague.....	35
Catholic Church Cross (Benedict) (<i>see also</i> subchart on Chart No. 26).....	35
City.....	35
Hallowing.....	36
Indian.....	36
Dwarf.....	37
Sothoron.....	37
Buzz.....	38
Billiard.....	38
Morsel.....	39
Trent.....	39
Collins.....	39
Sheridan.....	40
Cremona.....	40

LANDMARKS Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 19—Continued.

	Page.
Kitt.....	41
Oppkit.....	41
Battle.....	42
Photo.....	42
Fight.....	42
Slim.....	43
Forr.....	43
Sweep.....	44
Island.....	44
Peak.....	45
Cole.....	45
Hutchins.....	46
Wheat (<i>see also</i> Chart No. 20).....	46
Mackall (<i>see also</i> Chart No. 20).....	46
Sollers (<i>see also</i> Chart No. 20).....	47
Bars.....	47
Lend (<i>see also</i> Chart No. 20).....	48

Chart No. 20 (Lower Patuxent River)—

Wheat (<i>see also</i> Chart No. 19).....	46
Mackall (<i>see also</i> Chart No. 19).....	46
Sollers (<i>see also</i> Chart No. 19).....	47
Lend (<i>see also</i> Chart No. 19).....	48
Stock.....	48
Stump.....	48
Briscoe.....	49
Hellen.....	49
Nat.....	50
Ton.....	50
Mill.....	51
Bur.....	51
New.....	51
Catholic Church Cross.....	52
Cable.....	52
Town.....	52
Crane.....	53
Methodist Episcopal Church (Solomons).....	53
Knights of Pythias Flagstaff (Solomons).....	53
Sand.....	54
Fishstack.....	54
Bon.....	54
Bareda House Cupola.....	55
Drum Point Light.....	55
Ben.....	55
Craddock.....	56
Carroll 2.....	56
Hog 2.....	56
Pat.....	57
White House (Northeast Chimney).....	57
Cove Point Light.....	57
Cedar Point Light.....	58
Cain (<i>see also</i> Chart No. 21).....	58
Desert (<i>see also</i> Chart No. 21).....	58

LANDMARKS—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 21 (Chesapeake Bay below Cedar Point)—

	Page.
Cain (<i>see also</i> Chart No. 20).....	58
Desert (<i>see also</i> Chart No. 20).....	58
Hooper Island Light.....	59
Ford.....	59
Reed.....	59
Point Agin.....	60

Chart No. 22 (Chesapeake Bay vicinity of Point No Point)—

Point No Point.....	60
Point No Point Light.....	60
St. Jerome.....	61
St. Michael Catholic Church Spire.....	61
Point Look-in.....	61
Potomac (<i>see also</i> Chart N. 23).....	62
Point Lookout Light (<i>see also</i> Chart No. 23).....	62
Hall.....	62
Hall House (Middle Chimney).....	63
Sig (<i>see also</i> Chart No. 24).....	63

Chart No. 23 (mouth of Potomac River)—

Potomac (<i>see also</i> Chart No. 22).....	62
Point Lookout Light (<i>see also</i> Chart No. 22).....	62
Smith Point Light.....	63

Chart No. 24 (St. Marys River and Smith Creek)—

Sig (<i>see also</i> Chart No. 22).....	63
Red Beacon (1908).....	63
Dago.....	64
Tab.....	64
Pier.....	64
Pipe.....	65
Enough.....	65
Drum.....	65
In.....	66
Oak.....	66
Out.....	67
Stung.....	67
Jutland.....	67
Flat.....	68
Flagpole.....	68
Ran 2.....	68
Day.....	69
Labor.....	69
Lynch Point 3 (Virginia) (<i>see</i> Progress map).....	70
Between.....	70
Fort.....	71
Pond.....	71
Rod (Priest's House).....	71
Thompson.....	72
Raley.....	72
Inigoes.....	73
St. Inigoes Church Cross.....	73
Church.....	73
Cottage.....	74
Dusky.....	74

LANDMARKS—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 24—Continued.

	Page.
Grason	75
Rock	75
Smoke	75
Chestnut	76
Sleep	76
Grind	76
Kennedy	77
Coppage	77
Chan	78
Bello	78
Water Tower (Porto Bello)	78
Gravel	79
McKay	79
Brome	80
Deep	80
Calvert Monument	81
Episcopal Church Cross (Old St. Marys)	81
Pagan	81
Bend	81
West Hollow	82
Horseshoe	82
Brief	83
Tenuate	83
Martin	84
Soak	84
Hammett	85
McCoy	85
Smack	86
Cherry	86
Price	87
Adams	87
Goose	88
Straits	88
Combs	88
Swan	89
Taylor	89
Robrecht	90
Tarkhill	90
Russell	91
Lowell	91
Arbuckle	91
Wall	92
Shehan	92
Chadwick	92
Guither	93
St. George 4	93
Piney Point Light	94
<i>Chart No. 25 (St. Clement Bay and Bretons Bay)—</i>	
Foxwell	94
Valley	94
Buzzard	94

LANDMARKS—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 25—Continued.

	Page
Corn.....	95
Cedar.....	95
Noname.....	96
Belle.....	96
Pine.....	96
Healey.....	97
Mouldy.....	97
Beau.....	98
Hollow.....	98
Trees.....	98
Lovers.....	99
Paw.....	99
What.....	100
Cherry Cove.....	100
Protestant.....	101
Fence.....	101
Compton.....	102
Sandbar.....	102
Dune.....	103
Newtown.....	103
Grove.....	104
Cedoak.....	104
Kaywood.....	104
Heron.....	105
Blakistone Island Light.....	105
Herring Pond 2 (Virginia) (<i>see</i> Progress map).....	105
St. Clement.....	106
St. Patrick.....	106
Roof.....	107
Canoe.....	107
Rails.....	107
Woods.....	108
Catholic Church Cross (Newton Neck).....	108
Chapel.....	108
Shipping.....	109
Mansion.....	109
Howards.....	110
Mileys.....	110
Bank.....	110
Profound.....	111
Cecil.....	112
Radec.....	112
Place.....	113
Coburns.....	113
Guest.....	114
Tomakokin.....	114
Dynard.....	115
Turf.....	115
Stones.....	116
River Springs Catholic Chapel Cross (<i>see also</i> Chart No. 26).....	126

LANDMARKS—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 26 (Wicomico River)—

	Page.
Barber.....	116
Upper.....	117
Key.....	117
Stoddard.....	118
Cohouck.....	118
Hayden.....	118
Perry.....	119
Burr.....	119
Fact.....	120
Bowman.....	120
Eedling.....	120
Farr.....	121
Gust.....	121
Lyon.....	122
Sacred Heart Church Spire (Bushwood).....	122
Hedney.....	122
Charles.....	123
Weiss.....	123
Blakistone.....	123
Hard.....	124
Rock Point Catholic Church Cross.....	124
Prec.....	124
Corner.....	125
St. Margaret 2.....	125
Cobb Point Bar Light.....	126
River Springs Catholic Chapel Cross (<i>see also</i> Chart No. 25).....	126
Sound.....	126
Bailey.....	126
St. Catherine.....	127
Waterloo.....	127

BOUNDARIES OF OYSTER BARS:

Explanation.....	128
Method of describing boundaries.....	129
Surveying methods for relocation of boundaries.....	130
Boundaries of natural oyster bars in county ¹ —	

Chart No. 19 (upper Patuxent River)—

Brooks Shallows.....	133
Sothoron.....	133
Broad Neck (St. Marys County).....	134
Thomas (St. Marys County).....	134
Sandgates.....	134
Upper Forrest.....	135
Lower Forrest.....	135
Gatton.....	136
Captain Point.....	136
Peterson (St. Marys County) (<i>see also</i> Chart No. 20).....	137
Neale (<i>see also</i> Chart No. 20).....	137
Mears (St. Marys County) (<i>see also</i> Chart No. 20).....	137

¹ See separate publications for boundaries of natural bars in adjacent counties.

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

Chart No. 20 (Lower Patuxent River)—

	Page.
Peterson (St. Marys County) (<i>see also</i> Chart No. 19).....	137
Neale (<i>see also</i> Chart No. 19).....	137
Mears (St. Marys County) (<i>see also</i> Chart No. 19).....	137
Half Pone.....	138
Hawks Nest.....	138
Bob Wise.....	139
Spencers.....	139
Town Creek.....	140
Goodwin.....	140
La Grande.....	141
Millstone.....	141
Deep Point Mud.....	142
Carroll Muds (St. Marys County).....	142
Hog Island.....	143
Chinese Muds (St. Marys County).....	143
Cedar Point Hollow (<i>see also</i> Chart No. 21).....	144

Chart No. 21 (Chesapeake Bay below Cedar Point)—

Cedar Point Hollow (<i>see also</i> Chart No. 20).....	144
Rocky Beach.....	144
Tenacres.....	145
McKay.....	146
Fish Hawk (<i>see also</i> Chart No. 22).....	146

Chart No. 22 (Chesapeake Bay in vicinity of Point No Point)—

Fish Hawk (<i>see also</i> Chart No. 21).....	146
St. Jerome.....	147
Shaving Pile.....	147
Butler.....	148
Point Look-in.....	148
Point Lookout (<i>see also</i> Chart No. 23).....	149

Chart No. 23 (mouth of Potomac River)—

Point Lookout (<i>see also</i> Chart No. 22).....	149
--	-----

Chart No. 24 (St. Marys River and Smith Creek)—

Old Hare.....	149
Smith Creek.....	150
Graves.....	151
Jutland.....	151
Dunbar.....	152
Sedge Point.....	153
Mouth of Creek.....	153
Chicken Cock.....	153
Cherry.....	154
Middleground Lump.....	155
Fort.....	155
Edmund.....	155
Coad.....	156
Langley Hollow.....	156
Priest.....	157
Carthagea Creek.....	157
Thompson Creek.....	158
Raleys Shore.....	158

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

Chart No. 24—Continued.

	Page.
Kennedy.....	159
Jones.....	159
St. Inigoes North.....	160
St. Inigoes South.....	160
Coppage.....	161
Cooper Creek.....	161
Rosecroft Hollow.....	162
Gravelly Run.....	162
West St. Marys.....	163
Seminary.....	163
Pagan.....	164
Biscoe.....	165
Horseshoe.....	165
Short Point.....	166
Bryan.....	166
St. George.....	167
Hurdle.....	167
Goose Point.....	168
Island Shore.....	168
Milbourne Shore.....	169
Straits.....	170
Tarkhill.....	170
Swan.....	171
Rollin.....	171
Cedar Point.....	171
Shehan.....	172
Long.....	173
Chadwick.....	173

Chart No. 25 (St. Clement Bay and Bretons Bay)—

Mouldy Creek.....	174
Island.....	174
Paw Paw Hollow.....	175
Lovers Point.....	175
Stony.....	176
Gough.....	176
Black Walnut.....	177
Railway.....	177
Bretons Bay.....	178
Blue Sow.....	178
Heron Island Sound.....	179
Heron Island Reef.....	179
Dukehart Channel.....	179
Horse.....	180
St. Clement Entrance.....	180
Old Wreck.....	181
Newtown Flats.....	181
Canoe Creek.....	182
Chapel Point.....	182
Bluff Woods.....	183
Mileys Creek.....	183
Abell.....	184

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

Chart No. 25—Continued.

	Page.
Reed Point.....	184
Guest Marshes.....	185
Harry Jacks.....	186

Chart No. 26 (Wicomico River)—

Key.....	186
Cohouck.....	187
Chaptico Lumps.....	187
Mills East.....	188
Russell.....	188
Manahowie Creek.....	189
Bramleigh Creek.....	189
White Point.....	190
White Point Hollow.....	190
Blackistone.....	191
Bluff Point.....	191
Mouth of River.....	192
St. Margaret.....	192
Bullock.....	193
Bullock Island.....	193
St. Catherine.....	194
Hackley Creek.....	194
Waterloo.....	195
Silver Spring.....	195

APPENDIXES:

Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.....	196
Appendix B.—“The Haman Oyster Culture Law” (extract from Second Report of Shell Fish Commission).....	200
Appendix C.—Summary of the particular surveying operations which constitute an “oyster survey” as now being carried on in Maryland.....	201
Appendix D.—Statistics of results of the combined operations of the Government and State..	203

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws¹ authorizing the work and the natural division of the surveying operations² of the cooperating forces.

The publications prepared and issued by the Government, under the direction of the Superintendent of the Coast and Geodetic Survey, consist of a series of charts and a technical report for each county surveyed.³ The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey in charge of the work of that service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.⁴

The publications prepared and issued by the State under the direction of the Shell Fish Commission consist of annual reports⁵ of all the operations of the Commission performed under the provisions of the laws of Maryland,⁶ including results of biological

¹ See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

² See Appendix C for a summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.

³ These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C. The publications now ready for issue are those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, and St. Marys counties.

⁴ The technical records and charts for each county are published separately on account of the requirements of the oyster-culture laws of the State and the practical considerations which make it desirable to have each county "opened up" for oyster culture as soon as practicable after the completion of its survey. For these reasons and the fact that these reports are each arranged for distribution and use in one county only without reference to other published records, much of the text of this publication is of necessity identical with similar previous publications for other counties.

⁵ These reports can be obtained by application to the shell fish commission, Marine Bank Building, Baltimore, Md. They are issued annually in October, and the first and second reports are now available for distribution.

⁶ See Appendix B for an extract from the Second Report of the Maryland Shell Fish Commission, giving a concise summary of the "Haman Oyster Culture Law."

and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.¹

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential as a foundation for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.² A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the Bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL STATEMENT OF WORK OF COAST AND GEODETIC SURVEY.³

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need very little other summary than is indicated by the published Charts of Natural Oyster Bars and the index of hydrographic projections and triangulation stations shown on the county progress maps attached to each report.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, assistant, Bureau of Fisheries.

³ For a detail statement of the very large amount of excellent oyster survey work of the Maryland Shell Fish Commission see the annual reports of the Maryland Shell Fish Commission.

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the Descriptions of Triangulation Stations of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster-survey operations.

The hydrographic projections and published charts are prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shell-fish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to and permanently fixed by published technical descriptions which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way, and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County."

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last 65 years.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY IN ST. MARYS COUNTY.

INSTRUCTIONS.

The following letters, together with the laws¹ of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the survey at Washington, have proved very beneficial to the work and are greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

His Excellency HON. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

LAWRENCE O. MURRAY, *Assistant Secretary.*

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the Commissioners, prepare a program of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

Capt. C. C. YATES,

United States Coast and Geodetic Survey Steamer Endeavor, Baltimore, Md.

O. H. TITTMANN, *Superintendent.*

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides

¹ For these laws see Appendix A.

the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the field and the preparation for publication of oyster charts and technical records in the office at Washington.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house-boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster*, the Coast and Geodetic Survey party has had the constant use of the large steam launch *Inspector* and several other boats furnished by its own service, and the occasional use of the Bureau of Fisheries launch *Canvasback*¹ and the steamer *Governor McLane*² of the State fishery force.

The greater part of the equipment of instruments for the operations of both the Government and State has been furnished by the Coast and Geodetic Survey and consists of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.

The field work of the Coast and Geodetic Survey in St. Marys County³ dates from May 2, 1908, when the house-boat *Oyster* left Baltimore for an anchorage in the Patuxent River, inside of Solomons Island. She remained in this harbor for three months, it practically being the only suitable anchorage for the work of the oyster survey for a large part of the Chesapeake Bay shore of both St. Marys and Calvert counties, as well as for the lower Patuxent River. During this period there was a great amount of windy weather and consequent rough seas, which prevented work in the open bay, and in general the triangulation foundation for the oyster survey made very slow progress.

On August 4, 1908, the part of the work necessarily done from the mouth of the Patuxent River was completed, and the *Oyster* was moved about 7 miles up the river to St. Leonards Creek.

On August 18, 1908, the headquarters for the field work was again changed by moving the house-boat *Oyster* 8 miles still farther up the river to an anchorage in Battle Creek, where she remained until the completion of that part of the field work which naturally included all the Patuxent River work of Charles and Calvert counties as well as that of St. Marys County, although the results are published separately.

On September 3, 1908, the house-boat finally left the Patuxent River for Smiths Creek, which is one of the tributaries of Potomac River. From this station there was completed all the remaining work of the Chesapeake Bay shore of St. Marys County as well as that of Smiths Creek and the mouth of St. Marys River.

During the stay at Smiths Creek the work was greatly delayed by smoky atmosphere, especially that portion in the open Chesapeake Bay just north of the mouth of Potomac River, where some of the triangulation sides were necessarily comparatively long.

¹ By courtesy of Dr. H. F. Moore, U. S. Bureau of Fisheries.

² By courtesy of Capt. James A. Turner, commanding.

³ The field work of St. Marys, Calvert, and Charles counties was so intermixed in the Patuxent River that the chronological statement of work for any one of these counties necessarily includes a considerable part of the work of the other two counties.

On October 7, 1908, the house-boat *Oyster* was towed to an anchorage at the upper end of St. Marys River off the site of the monument marking Calvert's first settlement in Maryland. From this point the remaining work in St. Marys River, St. Inigoes Creek, and St. Georges River was quickly finished on account of very good weather.

On October 28, 1908, the State steamer *McLane* towed the *Oyster* to an anchorage off Rock Point, in the mouth of Wicomico River. From this location there was done all the oyster survey work of both St. Marys and Charles Counties in Wicomico River, St. Catherine Sound, and adjacent waters.

On November 25, 1908, the four launches of the combined oyster-survey parties towed the house-boat *Oyster* to harbor off the city of Leonardtown, at the head of Breton Bay. From this station all the oyster-survey work was completed in both Bretons Bay and St. Clements Bay.

On December 18 and 19, 1908, the *McLane* towed the house-boat *Oyster* and launches to their winter quarters in Baltimore.

On December 2, 1909, it was found necessary to obtain additional triangulation information for the publication of the technical report for Calvert County, which incidentally involved new work required for the report for Charles and St. Marys counties, and field work was carried on for that purpose from that date to December 8, 1909.

Again, from July 20 to August 11, 1910, while the house-boat *Oyster* was anchored in the mouth of the Patuxent River for the purpose of carrying on the oyster survey operations in the bay-shore waters of Dorchester County, a number of days when work could not be done in the open bay were employed in checking up deficiencies in the description of stations required for the publications of both Charles and St. Marys Counties.

The large amount of office work connected with the "oyster survey" of St. Marys County, including computations and drafting necessary for the preparation for publication of the oyster charts and the technical records, was continued intermittently with the office work of other counties from the beginning of the fieldwork in St. Marys County to the time of filing of the certified oyster charts and the technical reports in the archives of the Commission and with the clerk of the circuit court of St. Marys County on July 6, 1911.

STATISTICS.¹

Landmarks and triangulation signals erected	204
Monuments planted to mark triangulation stations	204
Triangulation stations occupied for observations of horizontal angles	186
Old triangulation stations recovered	33
New triangulation stations established	205
Total old and new triangulation stations marked and described	238
Linear miles of shore line covered by triangulation (approximate)	160
Square miles covered by triangulation (approximate)	180
Hydrographic projections prepared and completed as records of oyster boundaries	15
Triangles computed	443
Geographic positions computed	210
Corners of oyster boundaries established by computation	603

¹ These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of St. Marys County, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland. See Appendix D of this publication for "Statistics of results of combined operations of the Government and the State."

Back azimuths and distances computed from corners of boundaries to triangulation stations.	1,809
Descriptions of triangulation stations prepared for publication.	238
Descriptions of oyster boundaries prepared for publication.	124
Charts of Natural Oyster Bars prepared for publication.	8
Progress map prepared for publication.	1

GENERAL REMARKS.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore, of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unfailing tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the commission, who, as editor of the commission's annual report and commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Mr. Benjamin K. Green, treasurer of the commission, who has looked after the equipment and commissary of the house-boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Mr. Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

To Mr. Thomas H. Robinson, counsel to the Commission, for courteously furnishing valuable information relating to county boundaries.

And to the many others connected with the Commission or who, as residents in the locality where the work was being carried on, have greatly assisted by furnishing important information or willing services.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts ¹ of the natural oyster bars of St. Marys County, published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, consist of eight sheets covering all the waters of St. Marys County in Patuxent River, Chesapeake Bay, Smiths Creek, St. Marys River, and tributaries, Bretons Bay, St. Clement Bay, and Wicomico River.² They are published on a scale of 1 part in 20,000 (approximately $3\frac{1}{4}$ inches to a statute mile) and are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars and other boundaries established by the Commission and are certified for the purpose of filing in the office of the clerk of the Circuit Court of Charles County and in the office of the Commission at Annapolis, as required by the oyster laws of Maryland.

In addition to the oyster bar and other boundaries, the charts show the location and name of all landmarks (United States Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography ³ necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the heading "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a particular

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² The open waters of the Potomac River, although within the accepted boundaries of the State of Maryland, are under the joint jurisdiction of both Maryland and Virginia as to fisheries, and therefore the natural oyster bars of the Potomac River were not surveyed or are they shown in any way on the oyster charts of the adjacent counties of St. Marys and Charles.

³ Much of the detail of the inshore topography was obtained from the excellent map of St. Marys County, prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the U. S. Geological Survey.

oyster bar or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shellfish industries. The 1-fathom contour (6 feet) and the 5-fathom curve (30 feet) correspond in a general way to the inner and outer limits of all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with St. Marys County are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart within the boundaries of the different shellfish bottoms.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of St. Marys County, like those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, and Charles counties, have been prepared under the direction of the hydrographic engineer of the Commission. These charts are constructed on polyconic projections and are based on the United States standard datum of the Coast and Geodetic Survey. They are made on the scales of 1 part in 5,000 or 1 part in 10,000, as the needs of oyster culture may require. Anne Arundel County required 13 leasing charts; Somerset County, 12 charts; Wicomico County, 2 charts; Worcester County, 3 charts; Calvert County, 5 charts; Charles County, 2 charts; and St. Marys County, 8 charts to cover their oyster bottoms.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts

have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to the area under consideration, and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as possible.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in the Marine Bank Building at Baltimore.

PROJECTIONS.

The polyconic projections¹ covering St. Marys County waters are 15 in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, but the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission were plotted by the draftsman of the Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the archives of the Shell Fish Commission.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the United States Coast and Geodetic Survey in St. Marys County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress maps² accompanying the first and second annual reports of the Maryland Shell Fish Commission were prepared under the direction of the hydrographic engineer of the Commission. They are on the scale of 1 part in 400,000, and show the outline of the tidewater counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey.

¹ For the scheme of these projections see the progress map at the end of this publication.

² These maps and reports can be obtained by application to Maryland Shell Fish Commission, Marine Bank Building, Baltimore, Md.

BOUNDARIES OF THE COUNTY WATERS.¹

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line² between the waters "within the territorial limits" of St. Marys County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the "oyster charts" and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Patuxent River waters of St. Marys County.—Following the boundary line between St. Marys County and Charles County along the middle of Indian Creek as laid down on Chart No. 19, Natural Oyster Bars, Maryland, to a point defined by the intersection of this boundary line with the boundary line in the Patuxent River between Calvert County on one side and Charles and St. Marys counties on the other side as laid down on Chart No. 19, Natural Oyster Bars, Maryland; thence down the channel of Patuxent River following the channel boundary line between St. Marys and Calvert counties as laid down on Charts Nos. 19 and 20, Natural Oyster Bars, Maryland, to a point in the mouth of Patuxent River defined by the intersection of this boundary line with a straight line connecting a point defined by latitude $38^{\circ} 19' 09.8''$ and longitude $76^{\circ} 25' 21.0''$ ³ situated on Drum Point and a point defined by latitude $38^{\circ} 18' 35.9''$ and longitude $76^{\circ} 23' 59.8''$ situated on Hog Point; thence along a straight line ending at a point defined by latitude $38^{\circ} 18' 35.9''$ and longitude $76^{\circ} 23' 59.8''$ situated on Hog Point on the southern side of the entrance to Patuxent River.

Chesapeake Bay waters of St. Marys County.—Commencing at a point defined by latitude $38^{\circ} 18' 35.9''$ and longitude $76^{\circ} 23' 59.8''$ situated on Hog Point on the southern side of the entrance to Patuxent River; thence along the mean low water line of the Chesapeake Bay shore of St. Marys County across the mouth of all inlets less than 100 yards in width, around Cedar Point and Point No Point, across the mouth of St. Jerome Creek, and around Point Look-in to a point defined by latitude $38^{\circ} 02' 11.0''$ and longitude $76^{\circ} 19' 20.8''$ situated on Point Lookout on the northern side of the mouth of Potomac River.

Potomac River waters of St. Marys County.—Commencing at a point defined by latitude $38^{\circ} 02' 11.0''$ and longitude $76^{\circ} 19' 20.8''$ situated on Point Lookout on the northern side of the mouth of Potomac River; thence along the mean low-water line of the Potomac River shore of St. Marys County across the mouth of all inlets less than 100 yards in width, around Cornfield Harbor and Cornfield Point to a point defined by latitude $38^{\circ} 04' 53.4''$ and longitude $76^{\circ} 22' 24.2''$ situated on a point on the south side of the entrance to Briscoe Creek; thence in a straight line across the mouth of Briscoe Creek to a point defined by latitude $38^{\circ} 05' 05.4''$ and longitude $76^{\circ} 22' 35.3''$ situated on a point on the north side of Briscoe Creek; thence along the mean low-water line of the Potomac River shore of St. Marys County across the mouth of all inlets less than 100 yards in width, to a point defined by latitude $38^{\circ} 05' 14.6''$ and longitude $76^{\circ} 22' 47.8''$ situated on the southeastern side of the entrance to Harry James Creek; thence in a straight line across the mouth of Harry James Creek to a point defined by latitude $38^{\circ} 05' 27.6''$ and longitude $76^{\circ} 23' 16.5''$ situated on the northwestern side of the entrance to Harry James Creek; thence along the mean low-water line of the Potomac River shore of St. Marys County across the mouth of all inlets less than 100 yards in width, to a point defined by latitude $38^{\circ} 05' 37.8''$ and longitude $76^{\circ} 23' 33.2''$ situated on Grays Point on the eastern side of Calvert Bay entrance to Smiths Creek;

¹ For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

² See Charts of Natural Oyster Bars, published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

³ Latitudes and longitudes based on the United States standard datum of the U. S. Coast and Geodetic Survey.

thence in a straight line across the mouth of Smiths Creek to a point defined by latitude $38^{\circ} 06' 12.8''$ and longitude $76^{\circ} 25' 05.0''$ situated on Kitts Point on the western side of the entrance to Smiths Creek; thence along the mean low-water line of the Potomac River shore of St. Marys County across the mouth of all inlets less than 100 yards in width, to a point defined by latitude $38^{\circ} 06' 18.0''$ and longitude $76^{\circ} 25' 18.4''$ situated on Kitts Point on the eastern side of the entrance to St. Marys River; thence in a straight line across the mouth of St. Marys River to a point defined by latitude $38^{\circ} 06' 18.8''$ and longitude $76^{\circ} 27' 53.9''$ situated on a point on the southeast side of St. Georges Island on the western side of the entrance to St. Marys River; thence along the mean low-water line of the Potomac River shore of St. Marys County across the mouth of Island Creek and other inlets less than 100 yards in width, to a point defined by latitude $38^{\circ} 08' 04.2''$ and longitude $76^{\circ} 29' 58.6''$ on the southeastern side of the Potomac River entrance to the straits between St. Georges Island and the mainland leading into St. Georges River; thence in a straight line across the straits separating St. Georges Island from the mainland to a point defined by latitude $38^{\circ} 08' 15.9''$ and longitude $76^{\circ} 30' 07.2''$ situated on the northwestern side of the Potomac River entrance to the straits between St. Georges Island and the mainland leading into St. Georges River; thence along the mean low-water line of the Potomac River shore of St. Marys County around Piney Point and across the mouth of Herring Creek, Blake Creek, Poplar Hill Creek, and other inlets less than 100 yards in width, to a point defined by latitude $38^{\circ} 13' 58.3''$ and longitude $76^{\circ} 41' 13.3''$ situated on Higgins Point on the eastern side of the entrance to Bretons and St. Clement bays; thence in a straight line across the Heron Island Sound entrance to Bretons and St. Clement bays to a point defined by latitude $38^{\circ} 12' 54.7''$ and longitude $76^{\circ} 43' 12.0''$ situated on the eastern extremity of the sand bar known as Heron Island; thence in a straight line along the center of Heron Island to a point defined by latitude $38^{\circ} 13' 07.7''$ and longitude $76^{\circ} 43' 51.7''$ situated on the western extremity of the sand bar known as Heron Island; thence in a straight line across the Heron Island Sound entrance to St. Clement and Bretons bays to a point defined by latitude $38^{\circ} 12' 30.7''$ and longitude $76^{\circ} 44' 34.8''$ situated on the southeastern end of Blakistone Island; thence along the mean low-water line of the Potomac River shore of Blakistone Island of St. Marys County around Blakistone Island Light and across all inlets less than 100 yards in width to a point defined by latitude $38^{\circ} 12' 50.8''$ and longitude $76^{\circ} 44' 59.0''$ situated on the northwestern end of Blakistone Island on the southeastern side of Dukehart Channel; thence in a straight line across the Dukehart Channel entrance to St. Clement and Bretons bays to a point defined by latitude $38^{\circ} 13' 10.8''$ and longitude $76^{\circ} 45' 09.9''$ situated on the mainland on the northwest side of Dukehart Channel; thence along the mean low-water line of the Potomac River shore of St. Marys County across the mouth of Dukehart Creek and other inlets less than 100 yards in width to a point defined by latitude $38^{\circ} 13' 39.7''$ and longitude $76^{\circ} 46' 39.9''$ situated on the eastern side of the eastern St. Catherine Sound entrance to Wicomico River.

Wicomico River waters of St. Marys County.—Commencing at a point defined by latitude $38^{\circ} 13' 39.7''$ and longitude $76^{\circ} 46' 39.9''$ situated on the eastern side of the eastern St. Catherine Sound entrance to Wicomico River; thence in a straight line across the eastern St. Catherine Sound entrance to Wicomico River to a point defined by latitude $38^{\circ} 13' 42.2''$ and longitude $76^{\circ} 47' 17.5''$ situated on the extreme southeast end of the sand bar making out from the southeast end of St. Catherine Island; thence along a line on the center of the sand bar making out from the southeast end of St. Catherine Island as laid down on Chart No. 26, Natural Oyster Bars, Maryland, to a point defined by latitude $38^{\circ} 14' 02.6''$ and longitude $76^{\circ} 47' 32.6''$ situated on the southeastern end of St. Catherine Island; thence along the mean low-water line of the Potomac River shore of St. Catherine Island of St. Marys County across all inlets less than 100 yards in width to a point defined by latitude $38^{\circ} 14' 28.9''$ and longitude $76^{\circ} 48' 10.0''$ situated on the northwestern end of St. Catherine Island; thence in a straight line to a point in the mouth of Wicomico River defined by the intersection of the boundary line down the middle of Wicomico River between St. Marys and Charles counties as laid down on "Chart No. 26, Natural Oyster Bars, Maryland," and a straight line between a point on the northwestern end of St. Catherine Island defined by latitude $38^{\circ} 14' 28.9''$ and longitude $76^{\circ} 48' 10.9''$ and the center point of Cobb Point Bar Light defined by latitude $38^{\circ} 14' 33.3''$ and longitude $76^{\circ} 49' 36.9''$; thence following the boundary line between St. Marys County and Charles County along the middle of Wicomico River as laid down on "Chart No. 26, Natural Oyster Bars, Maryland," to the end of the water boundary between St. Marys County and Charles County on the northeastern side of the upper Wicomico River as laid down on "Chart No. 26, Natural Oyster Bars, Maryland."

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the United States Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county and the waters contiguous to but not within the territorial limits of adjacent counties.

This boundary line has been delineated on the "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and is technically described and defined as follows:

Commencing at a point located at the mouth and near the middle of Patuxent River defined by the intersection of Patuxent River channel boundary line between Calvert County and St. Marys County as laid down on Chart No. 20, Natural Oyster Bars, Maryland, and the straight line between a point situated on Hog Point on the southern side of the entrance to Patuxent River defined by latitude $38^{\circ} 18' 35.9''$ and longitude $76^{\circ} 23' 59.8''$ ¹ and a point situated on Drum Point on the northern side of the entrance to Patuxent River defined by latitude $38^{\circ} 19' 09.8''$ and longitude $76^{\circ} 25' 21.0''$; thence along the Chesapeake Bay boundary between Calvert and St. Marys counties as laid down on "Chart No. 20, Natural Oyster Bars, Maryland," to a point defined by latitude $38^{\circ} 19' 37.7''$ and longitude $76^{\circ} 19' 19.0''$ situated about $5\frac{1}{4}$ miles southeast of Cove Point Light and $5\frac{1}{4}$ miles east by north of Drum Point Light; thence along the Chesapeake Bay boundary between St. Marys and Dorchester counties as laid down on "Chart No. 20, Natural Oyster Bars, Maryland," to a point defined by latitude $38^{\circ} 17' 58.0''$ and longitude $76^{\circ} 18' 59.7''$ situated about $2\frac{3}{4}$ miles east of Cedar Point Light; thence along the Chesapeake Bay boundary between St. Marys and Dorchester counties as laid down on "Charts Nos. 20, 21, and 22, Natural Oyster Bars, Maryland," to a point defined by latitude $38^{\circ} 04' 34.8''$ and longitude $76^{\circ} 12' 01.0''$ situated near the middle of Chesapeake Bay near a shoal marked by a red buoy of the U. S. Bureau of Lighthouses, which is about $5\frac{3}{8}$ miles west by north of Holland Island Bar Light and $7\frac{1}{8}$ miles east by north of Point Lookout Light; thence with the waters of Chesapeake Bay in a straight line between Somerset County and St. Marys County as laid down on "Charts Nos. 22 and 23, Natural Oyster Bars, Maryland," to a point on Smith Point defined by the intersection of the straight line Maryland-Virginia boundary across Chesapeake Bay and the mean low-water line of the southern shore of Potomac River; thence in a straight line across the mouth of Potomac River along the line dividing the "waters of the Potomac River under the joint jurisdiction of Maryland and Virginia as to fisheries" from the waters of St. Marys County in Chesapeake Bay, as laid down on "Chart No. 23, Natural Oyster Bars, Maryland," to a point defined by latitude $38^{\circ} 02' 11.0''$ and longitude $76^{\circ} 19' 20.8''$ situated on Point Lookout on the northern side of the mouth of Potomac River.²

¹ Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

² The waters of the Potomac River, although belonging to the State of Maryland, are under the joint jurisdiction of Maryland and Virginia as to fisheries, and for this reason the Maryland Shell Fish Commission did not consider it necessary to define the "waters contiguous to St. Marys County" lying in the Potomac River.

LANDMARKS (UNITED STATES COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION.

The oyster laws of Maryland authorizing the survey to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of location and character of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking a landmark has only an indefinite idea of its location. They gradually proceed from description of the general locality of a landmark to the descriptions of its immediate surroundings. This is followed by specific details of the character of the center and reference marks and a "round" of reference angles and distances which in themselves frequently contain enough information to furnish an independent and reliable location of the triangulation station.

METHOD OF DESCRIBING TRIANGULATION STATIONS.

The separate descriptions of triangulation stations should not be used without reading the following explanation of the method of describing the triangulation stations, as it contains certain details that are common to all the landmarks described in this publication and which are omitted in the separate descriptions as being needless repetitions:

Name.—The title at the top of each separate description is the name by which the landmark or triangulation station is known and designated in all work and published oyster records or oyster charts of both the Government and State. The selection of the name is usually left to the triangulator establishing the station, and it may or may not have geographic or other significance in reference to the locality.

General locality.—Under this heading is given the general locality of the landmark in reference to well-known and prominent natural or artificial features, such as the

nearest body of water, town, river, steamer wharf, well-defined point of land, church, or any other feature that is likely to remain both permanent and prominent.

This heading also covers a reference to the published chart or map which shows the location of the station most clearly. Nearly all the triangulation stations described in this publication are plainly indicated by name and a triangulation symbol on the published charts of oyster bars of Maryland. In this case they are referred to by serial number only, the words "charts of oyster bars of Maryland" being omitted to avoid needless repetition. These published oyster charts are on the large scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inches to a statute mile) and show the location of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Immediate locality.—Under this heading is given the description of the "observed station" in reference to its immediate surroundings. This is supposed to include a statement of the station's estimated elevation above high water or some other well-defined level of the locality, such as a road or house; the character of the ground on which it is located, such as marsh land, sand beach, cultivated field, or meadow; estimated bearings in points of the compass and estimated distances in yards *from* (not *to*) easily recognized features, such as extreme end of point, edge of bluff, bank of creek, line of telephone poles, shore line, barn, house, fence, ditch, trees, or any other definite detail, such as being on range with the tangent of an island and a church; and so forth.

When a standard monument has been established near the station as a "reference station," this heading also covers a statement of the true bearing of the monument in degrees and minutes and its measured distance in meters, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached and might be mistaken for the center mark of the "observed station" unless special attention is called to it.

The distinction between the "observed station" and "reference station" should be carefully noted by anyone making use of the description of stations for any future surveying operations.

The "observed station" is located at the particular triangulation point covered by the description of stations, and is the one whose geographic position is first computed, as it is the point which was "occupied" and "observed on" for horizontal angles. However, in spite of the primary importance of the location of the "observed station," it will be noted from the description of stations that frequently it is not marked as well as the "reference station," and in many instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate "observed stations" on edges of banks and ends of points of land, which in the tidewater section of Maryland generally means they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the great need of "reference stations," if the frequent reestablishment of a new framework of triangulation is to be avoided.

The chief reason and need for the establishment of the "reference station," or secondary station, as it might be well named, is explained in the preceding paragraph, but in several instances other reasons, such as the location of the "observed station" on an unstable sand dune, in a cultivated field, in front of a residence, or other places

objectionable to the landowner, have led to establishment of "reference stations." The location of the "reference station" in relation to the "observed station" is fixed for plotting on charts or for computation of its geographic position by checked measurements of its distances and azimuth from the "observed station."¹

Marks.—Under this heading is given a description of the character of the permanent monuments or other marks of the location of the "observed station," and of the "reference station" where one has been established.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground, unless otherwise stated.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

References.—Under this heading are given the "rounds" of directions and distances to all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described, this, if possible, being a lighthouse, church spire, or other permanent and prominent point. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing² of the initial object is always given in parentheses alongside its name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by horizontal angles or for the relocation of corner buoys of oyster-bar boundaries by the method of compass directions described in this publication under the heading of "Boundaries of oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be

¹ Geographic coordinates (latitude, longitude, distance, and azimuth) relating to any of the "observed stations" or of the "reference stations" described in this publication can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² The mean magnetic variation for St. Marys County was $5^{\circ} 25'$ west of north in 1910 and increasing at the rate of $4'$ yearly.

looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of angular measure with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

PRINCE.

General locality.—Western shore of Patuxent River about one-fourth of a mile north of mouth of Swanson Creek. (See chart No. 19.)

Immediate locality.—Observed station is in pasture about 20 feet above high water, 15 yards northwest of edge of bank, 75 yards northeast of a grove of trees and 100 yards southwest of another grove of trees. Locust trees form a fringe along edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Leitch" (S. $83^{\circ} 01'$ E.).....	0	00	00	¾ mile.
Square chimney on house.....	0	02	..	¾ mile.
Chimney on store at Buena Vista.....	19	15	..	1¾ miles.
Chimney of Dr. Huggins house at Buena Vista.....	21	07	..	1¾ miles.
Nearest chimney on Gourley house on Hal- lowing Point.....	55	10	..	2½ miles.
Nail in blaze in locust tree (3 inches diam- eter).....	79	38	30	15.94 meters.
Nail in blaze in locust tree (4 inches diam- eter).....	110	13	30	14.55 meters.
Outside chimney on large house on hill.	150	45	..	¾ mile.
Near end of peak of roof.....	226	02	..	¾ mile.
Middle of clump of trees.....	273	00	..	100 yards.
Chimney of house.....	311	04	..	1¾ miles.
Nail in blaze in crotch of locust tree (6 inches diameter).....	350	39	10	19.27 meters.

LEITCH.

General locality.—Eastern shore of Patuxent River on prominent point opposite mouth of Swanson Creek given on chart as Gods Grace Point but known locally as Leitchs Point. (See chart No. 19.)

Immediate locality.—Observed station is on sand and grass land about 1 foot above high water and 3 yards north of straight line connecting two round points. It is about 13 yards northwest of the lower of these two points and 9 yards east of upper point. A creek 3 feet wide has its mouth about 19 yards east by south of the station. There are no permanent objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Prince" (N. $83^{\circ} 00'$ W.).....	0	00	00	¾ mile.
Near end of corner peak of roof of large house on hill.....	25	02	..	1¾ miles.
Near end of peak of wharf-house roof.....	77	46	..	¼ mile.
Right chimney of house.....	183	32	..	½ mile.
Right chimney of Gourley house.....	253	58	..	2 miles.
Canning-house stack.....	277	22	00	2 miles.
"Catholic Church Cross".....	281	35	30	2 miles.
Chimney of small house.....	308	52	..	1 mile.
Right outside chimney of old house.....	328	43	..	1¼ miles.
Right outside chimney of old house.....	343	05	..	1½ miles.

FODDER.

General locality.—Western shore of Patuxent River on the southern side of the mouth of Swanson Creek, about 1 mile west-southwest of Leitch Wharf and three-fourths of a mile west-northwest of Point Judith (locally known as Teague Point). (See chart No. 19.)

Immediate locality.—Observed station is on the edge of cultivated land about 10 feet above high-water mark, 4 yards west of edge of bank, and 9 yards north of another edge. Cement monument marking reference station is 15.21 meters S 60° 52' W of observed station.

Marks.—Observed station is center point of triangle on standard cement monument with a top 9 inches square and 8 inches above surface of ground. Reference station is center point of triangle on standard cement monument with a top about 8 inches square and 5 inches above surface of ground.

References.—

	°	'	"	
"Prince" (N. 25° 00' E.).....	0	00	00	1/2 mile.
Near peak of large house on bluff.....	17	55	..	2 miles.
Right corner of house.....	24	08	..	1 3/4 miles.
Near peak of Leitch Wharf house.....	35	11	..	1 3/4 miles.
Left peak of Leitch house.....	48	37	..	1 3/4 miles.
Front peak of house at Buena Vista.....	75	00	..	1 3/4 miles.
Chimney outside left end of house on hill....	87	16	..	2 miles.
Near peak of small house.....	101	33	..	3/8 mile.
Large chimney on small house.....	174	43	..	1 mile.
Left-side of left chimney outside Bowling house.....	211	47	..	3/4 mile.
REFERENCE STATION.....	215	52	30	15.21 meters.
Left corner of house on top of hill.....	318	27	..	1 mile.

BUENA.

General locality.—Eastern shore of Patuxent River, about 1 3/4 miles northeast of Benedict, at place known as Buena Vista. (See chart No. 19.)

Immediate locality.—Observed station is in a field on land adjoining house owned by S. V. Smith and occupied by Dr. Huggins. It is about 10 feet above high water, 8 yards east of edge of bank, and 12 yards south of a rail fence. Cement monument marking reference station is 11.11 meters N. 5° 42' E. of observed station and near fence.

Marks.—Observed station is nail in stub with top 2 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hallowing" (S. 27° 22' W.).....	0	00	00	1 1/2 miles.
Center of red roof on square house near Benedict.....	18	05	..	2 miles.
Canning-house stack.....	21	30	..	1 3/4 miles.
"Catholic Church Cross".....	29	04	10	1 3/4 miles.
Nail in blaze in locust tree (4 inches diam- eter).....	31	48	40	8.58 meters.
Left chimney of old house.....	66	15	..	3 miles.
Left chimney of old house.....	72	52	..	3 miles.
Nail in blaze on cherry tree (2 inches diam- eter).....	99	05	..	9.70 meters.
Peak of roof of large house.....	99	15	..	4 miles.
Chimney of house near Leitch Wharf.....	108	52	..	1 mile.
Nail in blaze on fence post.....	143	33	50	11.18 meters.
REFERENCE STATION.....	158	20	20	11.11 meters.
Near corner of house.....	159	44	..	25 yards.
Cherry tree on fence line (15 inches diameter). ..	221	25	..	35 yards.
Double apple tree (30 inches diameter).....	290	54	..	59 yards.

TEAGUE.

General locality.—Western shore of Patuxent River, on point on southern side of entrance to Swan-son Creek, locally known as Teague Point, and given on chart as Point Judith. (See chart No. 19.)

Immediate locality.—Observed station is on gravel and grass land about 3 feet above high water, about 11 yards from south side, 16 yards from north-northeast side, and 75 yards west by north of extreme end of point. Bushes stand between station and north side of point. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Buena" (N. 85° 24' E.).....	0	00	00	1½ miles.
Tangent of Teague Point.....	20	00	..	75 yards.
Near corner of right chimney of Gourley house, near Hallowing Point.....	65	45	..	1¼ miles.
Canning-house stack.....	106	18	00	1¼ miles.
Near end of peak of hotel.....	108	12	..	1¼ miles.
Left one of two ivy-covered chimneys.....	110	25	..	1 mile.
"Catholic Church Cross".....	114	11	10	1 mile.
Chimney on Slye House.....	130	30	..	2 miles.
Left chimney of house on hill.....	144	57	..	2 miles.
Tangent of high-water mark.....	168	00	..	75 yards.
Near end of peak of roof.....	223	41	..	1 mile.
Chimney on large house on hill.....	243	20	..	3 miles.
Left chimney on house.....	301	17	..	1 mile.
Near end of peak of roof on store at Buena Vista.....	355	59	..	1¼ miles.

CATHOLIC CHURCH CROSS (BENEDICT).

General locality.—Western shore of upper Patuxent River, in the town of Benedict. (See chart No. 19.)

Immediate locality.—Observed station is on Catholic Church, located on the main street of the town of Benedict, about one-fourth mile from the wharf.

Marks.—Observed station is center point of cross on church.

References.—None necessary.

CITY.

General locality.—Western shore of Patuxent River, on Town Point, about one-fourth mile north-northeast of Benedict steamboat wharf. (See chart No. 19.)

Immediate locality.—Observed station is on gravel and shell point, about 4 feet above high water, 12 yards northwest of the shore, 63 yards west-southwest of a shanty, about 100 yards west-southwest of extreme end of point, and 11 yards southeast of a slough. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hallowing" (S. 51° 21' E.).....	0	00	00	1½ mile.
Windmill near Sheridan Point.....	21	39	..	3½ miles.
Two middle chimneys at Dowells.....	21	39	..	3½ miles.
Left tangent of peak of wharf-house roof.....	81	34	..	¼ mile.
Center of roof of square house.....	84	36	..	½ mile.
Canning-house stack.....	95	22	..	¼ mile.
Nearest ivy-covered chimney of old house.....	130	14	..	½ mile.
"Catholic Church Cross".....	142	58	50	¼ mile.
Left square chimney of house.....	245	42	..	1¾ miles.
Near end of peak of roof of Huggins house.....	280	54	..	1½ miles.
Near corner of shanty.....	300	44	..	63 yards.
Right chimney of Gourley house.....	339	20	..	¾ mile.
Chimney of old building behind wharf.....	352	01	..	¾ mile.

HALLOWING.

General locality.—Eastern shore of Patuxent River on point opposite Benedict known locally as Holland Point, but given on charts as Hallowing Point. (See chart No. 19.)

Immediate locality.—Observed station is on a rounded gravel and grass point about 250 yards south of wharf on Holland Point, about 2 feet above high water, 10 yards north of shore, 8 yards east of shore, and 15 yards outside of a group of locust trees, sugar-berry trees, and bushes.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"City" (N. 51° 21' W.).....	0	00	00	¾ mile.
Left end of peak of roof of wharf house on Holland Point.....	23	15	..	250 yards.
Chimney of store at Buena Vista.....	77	27	..	1¾ miles.
Nail in blaze in nearest one of group of four sugar-berry trees (each 8 inches diameter).....	92	24	..	12.88 meters.
Nail in blaze in sugar-berry tree (10 inches diameter).....	109	58	50	15.74 meters.
Nail in blaze in locust tree (4 inches diameter).....	167	55	40	11.90 meters.
Smokepipe on Trent Hall Wharf building...	227	35	..	2¾ miles.
Outside chimney of detached house at Sothorons.....	309	54	..	1½ miles.
Center of roof on square house.....	314	15	..	¾ mile.
Canning-house stack.....	333	16	..	½ mile.
"Catholic Church Cross".....	347	44	20	¾ mile.

INDIAN.

General locality.—Western shore of Patuxent River on north side of entrance to Indian Creek and about one-fourth mile below Benedict steamboat wharf. (See chart No. 19.)

Immediate locality.—Observed station is about 3 feet above high water, 7 yards west of shore, 16 yards northeast of a fence and a line of trees, 13 yards southwest of a lone locust tree, about 250 yards to the south-southeast of a large square house, and 125 yards east-northeast of another house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sothoron" (S. 23° 11' E.).....	0	00	00	1 mile.
Nail in blaze in locust tree near fence (5 inches diameter).....	33	48	50	15.57 meters.
Nail in blaze in middle branch of locust tree (6 inches diameter).....	66	24	50	19.13 meters.
Square chimney on old house.....	137	23	..	1¾ miles.
Right chimney of square house.....	188	30	..	⅝ mile.
Near end of peak of roof of hotel.....	206	26	..	¼ mile.
Canning-house stack.....	213	22	10	¼ mile.
Right tangent of Benedict Wharf.....	228	10	..	½ mile.
Chimney of house near "Buena Vista".....	245	58	..	2¼ miles.
Chimney of Gourley house.....	270	28	..	1 mile.
Windmill at Dowell's on Sheridan Point.....	344	48	..	4¼ miles.
Left of right chimney on Dowell house.....	344	48	..	4¼ miles.
Nail in blaze in left branch of locust tree (5 inches diameter).....	225	28	..	12.90 meters.

DWARF.

General locality.—Eastern shore of Patuxent River about 2 miles north-northwest of Sheridan Point and about $1\frac{1}{2}$ miles southeast of Benedict, on a point of land opposite the mouth of Indian Creek. (See chart No. 19.)

Immediate locality.—Observed station is on sand and grass land about 1 foot above high-water mark, 6 yards northeast from extreme end of point, 4 yards east of one edge of shore and 6 yards north of another edge of shore. Point on which station is located has a sugar-berry tree, several small locust trees and water bushes, and a pond behind bushes and trees about 100 yards to the east.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sothoron" (S. $42^{\circ} 05'$ W.).....	0	00	00	$\frac{3}{4}$ mile.
Nearest corner of top of nearest chimney on tenant house.....	80	31	..	2 miles.
Center of roof of square house.....	83	16	..	1 mile.
Nail in blaze in locust tree (4 inches diameter).....	93	38	30	4.22 meters.
Canning-house stack.....	95	03	33	$1\frac{1}{4}$ miles.
"Catholic Church Cross".....	99	03	10	$1\frac{1}{4}$ miles.
Left tangent of wharf.....	124	19	..	$\frac{3}{4}$ mile.
Nail in sugar-berry tree (10 inches diameter). ..	152	38	30	8.94 meters.
Nail in blaze in locust tree (3 inches diameter).....	196	22	20	2.68 meters.
Chimney on small house.....	258	48	..	2 miles.
Left point of peak of roof of Dowell's.....	287	30	..	$2\frac{1}{4}$ miles.
Left end of peak of roof of Trent Hall Wharf. ..	315	35	..	$1\frac{1}{2}$ miles.
Middle cupola on stable.....	321	12	20	$1\frac{1}{2}$ miles.
Right pillar on Sothoron house porch.....	359	21	..	1 mile.

SOTHORON.

General locality.—Western shore of Patuxent River on Long Point between entrances to Indian and Trent Hall creeks. (See chart No. 19.)

Immediate locality.—Observed station is on sand and grass lowland about 1 foot above high-water mark among cedar trees, about 24 yards west by north of extreme end of point, 12 yards north of one edge of shore and 30 yards southwest of another edge of shore.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hallowing" (N. $13^{\circ} 51'$ E.).....	0	00	00	$1\frac{1}{4}$ miles.
Nearest chimney on Gourley house.....	3	55	..	$1\frac{1}{4}$ miles.
Nail in blaze in locust tree (4 inches diameter).....	30	49	..	3.35 meters.
Left end of peak of roof of Dowell house.....	120	35	..	$2\frac{1}{4}$ miles.
Middle cupola on Trent Hall stable.....	150	25	00	$1\frac{1}{4}$ miles.
Point of middle attic window on John Bul-linger house.....	187	42	+	1 mile.
Left pillar of porch of Sothoron house.....	206	23	..	$\frac{1}{2}$ mile.
Nail in blaze in cedar tree (12 inches diameter).....	242	51	50	8.12 meters.
Near corner of nearest chimney on Slye house.....	291	05	20	2 miles.
Nail in blaze in locust tree (4 inches diameter). ..	302	29	40	10.83 meters.
Right one of two outside chimneys on old house on hill on property of A. B. Slye....	307	31	..	2 miles.
Center of roof on square house.....	323	39	..	1 mile.
Nail in blaze in locust tree (6 inches diameter). ..	350	24	10	12.81 meters.

BUZZ.

General locality.—Northeast shore of Patuxent River on southwest side of Buzzards Island near mouth of Buzzards Island Creek. (See chart No. 19.)

Immediate locality.—Observed station is on marsh, clay, and grass land on wooded island about 2 feet above high water, 5 yards northeast of river shore and 40 yards northwest of extreme point of island. Cement monument marking reference station is 8.97 meters N. $42^{\circ} 23'$ E. of observed station.

Marks.—Observed station is nail in stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Morsel" (S. $25^{\circ} 23'$ E.)	0	00	00	3¼ mile.
Smoke pipe on roof of storehouse	39	11	..	2 miles.
Near corner of near chimney	40	36	..	2 miles.
Chimney of Trent Hall	50	48	..	1¼ miles.
Nearest of three cupolas on stable	54	36	50	1¼ miles.
Left piazza post at Sothorons	102	41	..	1¼ miles.
Center of roof of square house	155	15	..	1¾ miles.
"Catholic Church Cross"	164	56	..	2 miles.
Nail in blaze in oak tree (18 inches diameter)	172	14	..	4.55 meters.
Nail in blaze in oak tree (18 inches diameter)	198	36	40	13.16 meters.
Nail in blaze in oak tree (24 inches diameter)	235	08	30	9.62 meters.
REFERENCE STATION	252	45	45	8.97 meters.
Nail in blaze in pine tree (5 inches diameter)	255	43	..	6.52 meters.
Chimney on house across creek	313	23	..	¼ mile.

BILLIARD.

General locality.—Southwest shore of Patuxent River about one-fourth of a mile southeast of entrance to Trent Hall Creek. (See chart No. 19.)

Immediate locality.—Observed station is on marsh land about 1 foot above high-water mark, 6 yards west of shore, 70 yards north of curve in shore and about 100 to 150 yards north to northwest of a fence which runs to water's edge. No permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Trent" (S. $32^{\circ} 53'$ E.)	0	00	00	¾ mile.
Middle cupola on Trent Hall stable	16	36	..	½ mile.
Chimney on Trent Hall	18	41	..	½ mile.
Two trees	31	47	..	200 yards.
Tangent of curve in water line	33	00	..	71 yards.
Chimney of 2½-story house	81	59	..	2 miles.
Right corner of Sothoron house	162	34	..	½ mile.
Near corner of chimney on Slye house	171	09	..	2 miles.
Right tangent of wharf	213	11	..	2 miles.
Middle of three chimneys on Gourley house	228	53	..	2 miles.
Chimney on house among trees	293	41	..	1½ miles.
Nearest end of peak roof of Dowell house at				
Dukes Wharf	333	42	..	1¼ miles.
Right tangent of Sheridan Point	341	34	..	1½ miles.
Left tangent Trent Hall Wharf	348	49	..	¾ mile.
Smoke pipe on house at land end of Trent				
Hall Wharf	356	53	..	¾ mile.

MORSEL.

General locality.—Northeast shore of Patuxent River about 1 mile north by west of Sheridan Point. (See chart No. 19.)

Immediate locality.—Observed station is in a wheat field on a cliff about 60 feet above high water, about 5 yards northeast of edge of bank, 110 yards north northwest of rail fence at woods, 103 yards west southwest of woods, and 167 yards west northwest of corner of field at creek and woods. Trees grow out of face of cliff below station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sheridan" (S. 5° 27' E.)	0	00	00	7½ mile.
Near corner of near chimney on brick end of Dowell house	37	12		2 miles.
Chimney beyond weeping willow at Trent Hall	62	58		1 mile.
Nearest chimney on Slye house	128	11		3 miles.
"Catholic Church Cross"	148	44	00	2¾ miles.
Chimney on house with tin roof ell	172	17		1 mile.
Oak tree near creek (4 feet diameter)	297	27		167 yards.
Large white-oak tree	330	50		110 yards.

TRENT.

General locality.—Southwest shore of Patuxent River on White Point about 50 yards west of Trent Hall Wharf. (See chart No. 19.)

Immediate locality.—Observed station is 1 foot above high-water mark on sand and grass land between river and marsh, about 47 yards west of small house on land end of Trent Hall Wharf, about 64 yards northwest of extreme end of White Point, 5 yards southwest of high-water mark, about 428 yards north of Trent Hall and 105 yards south by east of mouth of creek. Cement monument marking reference station is 17.18 meters S. 69° 40' W. of observed station.

Marks.—Observed station is nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sheridan" (S. 57° 31' E.)	0	00	00	1½ miles.
Tangent of point	32	17		½ mile.
Large lone tree	50	15		½ mile.
Right corner of Trent Hall	74	08		428 yards.
Right cupola of three on Trent Hall stable	99	40		300 yards.
Large lone tree	113	51		150 yards.
REFERENCE STATION	127	10	30	17.18 meters.
"Catholic Church Cross"	219	22	20	2¾ miles.
Right end of peak of roof of Holland Point Wharf	233	05		2¼ miles.
Right chimney of smaller of two houses among trees	284	01		2 miles.
Right chimney of house	300	35		5½ miles.
Right corner of shanty	300	36		47 yards.

COLLINS.

General locality.—Southwest shore of Patuxent River about one-fourth of a mile northwest of entrance to Washington Creek on point opposite Sheridan Point. (See chart No. 19.)

Immediate locality.—Observed station is on marsh land about 1 foot above high-water mark, 16 yards west of shore, 20 yards northwest of shore, 21 yards southwest of shore, 300 yards northeast of a tall lone tree, and 300 yards southeast of house known as Trent Hall.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sheridan" (S. 80° 59' E.).....	0	00	00	¾ mile.
Left end of peak of roof of De La Brooke Pier.	52	12	..	2¼ miles.
Right side of right chimney of large painted brick house.....	60	23	..	2¼ miles.
Near corner of Thomas house (Cremona).....	73	22	..	1 mile.
Smoke pipe in chimney on store.....	98	28	..	½ mile.
Large lone tree.....	129	07	..	300 yards.
Small lone tree.....	175	10	..	130 yards.
Near corner of Trent Hall Wharf house.....	244	37	..	½ mile.
Chimney on end of roof of house among trees.	287	41	..	2¼ miles.
Left corner of left chimney of Dowell house..	354	11	..	1 mile.

SHERIDAN.

General locality.—Northeast shore of Patuxent River on Sheridan Point. (See chart No. 19.)

Immediate locality.—Observed station is on sand and grass point near edge of the grass, about 2 feet above high-water mark, 6 yards east of extreme edge of grass on point, 8 yards north of grass edge and 7 yards south of grass edge. Cement monument marking reference station is 14.13 meters N. 49° 56' E. of observed station.

Marks.—Observed station is nail in stub with top 6 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Kitt" (S. 66° 05' E.).....	0	00	00	1¼ miles.
Right tangent of brick house.....	10	41	..	6 miles.
Left end of peak of roof of De La Brooke Pier.	56	13	..	1¾ miles.
Left corner of left chimney of Thomas house (Cremona).....	102	38	..	1¼ miles.
Smoke pipe on several gable house.....	124	25	..	1¼ miles.
Right tangent of Trent Hall Wharf.....	192	00	..	1 mile.
Catholic Church at Benedict.....	216	56	..	3½ miles.
REFERENCE STATION.....	296	01	00	14.13 meters.
Near chimney of Dowell house.....	325	23	..	¾ mile.

CREMONA.

General locality.—Southwest shore of Patuxent River about halfway between Cremona and Persimmon creeks. (See chart No. 19.)

Immediate locality.—Observed station is in orchard on farm known as Cremona, about 6 feet above high-water mark, 10 yards south of edge of river bank, 7 yards south of rail fence which runs west and east to dooryard fence, 36 yards east of rail fence of cornfield, 75 yards north of rail fence at cornfield, and 53 yards west of picket fence. Several mountain dwarf cherry trees stand between fence and river-bank edge.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Kitt" (N. 84° 13' E.).....	0	00	00	2 miles.
Near end of peak of roof of Young Hance house.....	16	26	..	3 miles.
Nail in blaze in apple tree (24 inches diameter).	37	38	20	24.55 meters.
Nail in blaze in apple tree (16 inches diameter).....	62	43	30	13.12 meters.
Nail in blaze in apple tree (15 inches diameter).....	100	33	30	16.11 meters.
Corner of field.....	181	55	..	87 yards.
Corner of field.....	233	32	..	38 yards.

KITT.

General locality.—Northeast shore of Patuxent River on Kitts Marsh Point, which is about half-way between Battle Creek and Sheridan Point. (See chart No. 19.)

Immediate locality.—Observed station is on the point of a long marsh neck, about 15 yards north-east of extreme end of point, 13 yards north of edge of marsh, and 13 yards east of edge of marsh. There are no permanent reference objects near station. Cement monument marking reference station is 15.84 meters N. $10^{\circ} 23'$ E. of observed station.

Marks.—Observed station is nail in stub flush with surface of marsh. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Battle" (S. $39^{\circ} 02'$ E.).....	0	00	00	1½ miles..
Right tangent of Long Marsh.....	7	53		2 miles.
Near end of peak of roof of De La Brooke Pier.	73	52		1½ miles.
Near corner of near chimney of Thomas house.	83	31		1¾ miles.
Large house.....	167	38		1 mile.
Square chimney of large house.....	185	23		¼ mile.
REFERENCE STATION.....	229	24	40	15.84 meters.
Left chimney of house.....	243	56		2½ miles.
Hance house.....	299	13		2 miles.
Right chimney of house among trees on hill.	327	24		4 miles.
Left chimney of house.....	336	50		4 miles.

OPPKIT.

General locality.—Southwest shore of Patuxent River on Marsh Point. (See chart No. 19.)

Immediate locality.—Observed station is on sand and grass ridge between sand beach and marsh, about 1 foot above high water, 3 yards southwest of high-water mark, 60 yards west-northwest of one point of the beach, 64 yards south of another point of the beach, and 85 yards north-northwest of an oyster watch house on piles. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Kitt" (N. $56^{\circ} 31'$ E.).....	0	00	00	1½ miles.
Near end of peak of roof of Williams Wharf house.....	36	46		2½ miles.
Left corner of watch house.....	87	27		85 yards.
Left point of peak of roof of De La Brooke Pier.....	94	09		1 mile.
Right corner of right chimney of brick house..	126	42		½ mile.
Chimney on house near trees.....	232	43		¾ mile.
Highest chimney on Cremona House.....	254	49		¾ mile.
Point of roof of Dukes Wharf.....	310	09		1½ miles.
Chimney on house with ell.....	330	49		1½ miles.
Large square brick chimney on house with ell.	334	08		1½ miles.
Nearest chimney of pair on end of house....	353	00		1½ miles.

BATTLE.

General locality.—Northeast shore of Patuxent River on west side of entrance to Battle Creek on Prison Point. (See chart No. 19.)

Immediate locality.—Observed station is on sand and grass land between marsh and river, about 1 foot above high water, 85 yards south of a field, 6 yards northeast of shore, 20 yards southwest of edge of a pool, 100 yards southwest by west of a lone tree, 200 yards west of a small house among trees, and 100 yards west to northwest of several dwarf trees between house and beach.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Forr" (S. 3° 17' E.).....	0	00	00	2¼ miles.
Chimney on middle of roof of house.....	1	52	..	2¼ miles.
Left corner of left chimney of very large house.....	8	36	..	2¼ miles.
Right chimney of large 2½-story brick house.....	82	00	..	1½ miles.
Tangent to Sheridan Point.....	129	20	..	2½ miles.
Right end of peak of roof of 2½-story house.....	139	50	..	2¼ miles.
Chimney of 2½-story house on hill.....	155	19	..	2 miles.
Lone tree.....	254	41	..	80 yards.
Outside chimney of house on hill.....	264	11	..	3 miles.
House among trees.....	282	15	..	100 yards.
Tangent of Long Marsh.....	341	45	..	1½ miles.
Left chimney of 2½-story house.....	348	38	..	3 miles.
Chimney of 2½-story house.....	352	57	..	2 miles.
Right tangent of Forrest Wharf.....	357	59	..	1½ miles.

PHOTO.

General locality.—Northeast side of Patuxent River on east side of entrance to Jacks Bay. (See chart No. 19.)

Immediate locality.—Observed station is in a cultivated field, about 150 yards north-northeast of a marshy point, 10 feet above high-water mark, 49 yards east of shore, 110 yards north-northwest of shore, and 68 yards northeast of right end of clump of trees at edge of field and beginning of marsh point.

Marks.—Observed station is nail in stub with top 2 inches above surface of ground. Subsurface mark is center point of triangle on standard cement monument with top 12 inches below surface.

References.—

	°	'	"	
"Slim" (S. 52° 03' E.).....	0	00	00	1½ miles.
Chimney on old house.....	51	21	..	2 miles.
Cedar trees.....	60	00	..	85 yards.
Left corner of house.....	73	03	..	2 miles.
Smoke pipe on house behind trees.....	78	08	00	2 miles.
Left tangent of Forrest Wharf.....	81	00	20	2¼ miles.
Tree.....	90	10	..	70 yards.
Watch house on point.....	118	52	..	½ mile.
Right chimney on 2½-story brick house.....	150	37	..	5 miles.
Locust tree (20 inches diameter).....	241	23	..	135 yards.
Left chimney of house.....	222	45	..	½ mile.
Willow tree.....	331	27	..	140 yards.

FIGHT.

General locality.—Southwest shore of Patuxent River opposite mouth of Battle Creek on a prominent low point. (See chart No. 19.)

Immediate locality.—Observed station is on land known as Horshead Marsh, about 1 foot above ordinary high-water mark, 12 yards south-southwest of extreme end of point, 15 yards west-northwest of shore at small creek, 40 yards northeast of woods, and 110 yards east-southeast of a bluff 50 feet high.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	/	//	
"Battle" (N. $50^{\circ} 45'$ E.).....	o	oo	oo	13 $\frac{1}{4}$ miles.
Outside chimney in center of group of buildings.....	13	3o	..	2 $\frac{1}{4}$ miles.
Left chimney of house on top of hill.....	23	44	..	3 $\frac{3}{4}$ miles.
Left tangent of Forrest Wharf.....	82	o6	1o	2 miles.
Near end of peak of roof of 2 $\frac{1}{2}$ -story building.....	83	47	..	13 $\frac{3}{4}$ miles.
Large square chimney on large building.....	91	19	..	1 mile.
Left corner of left chimney of large house....	262	4o	..	1 mile.
Dowells windmill.....	3oo	28	..	2 $\frac{1}{2}$ miles.
Left chimney on small house adjoining large house.....	321	41	..	2 $\frac{1}{4}$ miles.
Chimney of small house.....	325	38	..	2 miles.

SLIM.

General locality.—Northeast shore of Patuxent River about half way between Battle and Island creeks and one-half mile west-northwest of Parkers Wharf. (See chart No. 19.)

Immediate locality.—Observed station is in a field on a sand bluff, about 40 feet above high water, 13 yards northeast of edge of bluff, 90 yards southeast of a point of woods at top of a ravine, about 180 yards southwest of another point of woods, 150 yards west-northwest of a rail fence, and 71 yards northwest by west of a large sycamore tree.

Marks.—Observed station is nail in round chestnut stub with top about 6 inches above the surface of the ground. Subsurface mark is center point of triangle on standard cement monument with top 10 inches below the surface of the ground.

References.—

	o	/	//	
"Island" (S. $59^{\circ} 31'$ E.).....	o	oo	oo	2 $\frac{1}{2}$ miles.
Cedar in field.....	2	38	5o	200 yards.
Large sycamore tree.....	29	2o	..	71 yards.
Near end of peak of roof of Jones Wharf house.....	53	27	..	2 $\frac{1}{2}$ miles.
Chimney on middle of roof of a long house..	109	34	..	13 $\frac{3}{4}$ miles.
Outside chimney of house near Forrest Wharf.....	125	26	..	2 miles.
Nearest chimney on Thomas large brick house.....	166	16	..	4 miles.
Tangent of Long Point marsh.....	171	24	..	1 $\frac{1}{2}$ miles.
Left tree on point.....	191	o6	..	90 yards.
Two high trees close together near right edge of point of woods.....	284	27	..	180 yards.
Large walnut tree.....	298	2o	..	$\frac{1}{4}$ mile.
Near end of peak of roof of barn.....	304	23	..	$\frac{1}{2}$ mile.

FORR.

General locality.—Southwest shore of Patuxent River just below Forrest Wharf. (See chart No. 19.)

Immediate locality.—Observed station is about 1 foot above high-water mark on sand and grass land, 7 yards south from extreme high-water mark, 45 yards southeast of land end of Forrest Wharf, 70 yards east by south of an old 2 $\frac{1}{2}$ -story building, and 65 yards northeast of a saloon.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—	°	'	"	
"Cole" (S. 50° 07' E.).....	0	00	00	1½ miles.
Near corner of house on hillside.....	9	59		180 yards.
Near corner of saloon.....	101	52		65 yards.
Outside chimney on house on hill.....	115	22		½ mile.
Curve in road up hill.....	131	25		200 yards.
West corner of old 2½-story building.....	139	52		70 yards.
Land end of wharf.....	169	15		45 yards.
Windmill.....	182	59	40	2¾ miles.
Left corner of left chimney brick house.....	183	05		3 miles.
Right tangent of Dukes Wharf.....	187	07		4¼ miles.
Near end of peak of roof of Forrest Wharf house.....	257	17		¾ mile.
Chimney of house.....	272	35		3 or 4 miles.
Right tangent of roof.....	304	23		2½ miles.
Tangent of trees.....	347	46		3 miles.

SWEEP.

General locality.—Northeast shore of Patuxent River on northwest side of mouth of Island Creek near inner end of neck of land joining Broome Island to the mainland. (See chart No. 19.)

Immediate locality.—Observed station is in a field about 4 feet above high water, 4 feet northwest of a wire fence, 24 yards south by west of a stable, 60 yards south-southwest of a house, and 100 yards south-southeast of a pine grove. Cement monument marking reference station is 21.70 meters N. 59° 39' E. of station and near fence line.

Marks.—Observed station is the center of an oblong wooden box 4 inches square with top 4 inches above the ground. Reference station is center point of triangle on a standard cement monument.

References.—	°	'	"	
"Bars" (S. 15° 10' E.).....	0	00	00	2 miles.
Right chimney of house.....	14	48		3 miles.
Peak of roof of Gadden house.....	25	34	20	1½ miles.
Tangent of Broome Island Point.....	43	21		½ mile.
Chimney on house on hill.....	51	57		3 miles.
Gilt ball on lightning rod.....	62	03		¾ mile.
Chimney on house.....	96	06		¼ mile.
Cut in woods.....	135	40		1½ miles.
Chimney of house.....	186	34		150 yards.
Tile smoke pipe on house.....	203	24		140 yards.
Near corner of house.....	230	35		60 yards.
Near corner of barn.....	237	32		24 yards.
REFERENCE STATION.....	254	49	20	21.70 meters.
Right chimney of four on house.....	279	25		¼ mile.
Top of tower of house.....	301	54		2½ miles.

ISLAND.

General locality.—Northeast shore of Patuxent River on the extreme southeast point of land about one-half mile to the east of the mouth of Island Creek. (See chart No. 19.)

Immediate locality.—Observed station is on a marshy point at about extreme high-water mark, 30 yards north of extreme end of point, 25 yards east of one side of point, and 20 yards west of another side of point. Old tile pipe used as a reference station is 16.98 meters N. 12° 39' E. and cement monument marking new reference station is 30.93 meters N. 2° 40' E. of observed station.

Marks.—Observed station is nail in stub with top flush with marsh. Old reference station is center of 4-inch tile pipe set in cement with top projecting about 10 inches above ground. New reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Wheat" (S. 53° 15' E.).....	0	00	00	2 miles.
Left end of peak of roof of Sotterly Wharf house.....	46	07		2 miles.
Pinnacle of large house in trees.....	60	49		2 miles.
Left chimney of large house back on hill....	67	54		2 miles.
Chimney on middle of large 2½-story house...	109	59		1½ miles.
Middle of railing on top of roof of 2½-story house.....	120	00		3 miles.
Chimney of Broome house.....	143	41		¾ mile.
Weather vane on Broome house.....	148	33	30	¾ mile.
Right chimney of house.....	178	21		3 miles.
Right chimney of house.....	193	27		2 miles.
REFERENCE STATION (cement monument)....	235	55	00	30.93 meters.
REFERENCE STATION (tile pipe).....	245	54	20	16.08 meters.
Smoke pipe of watchhouse.....	333	29		1 mile.
Tower of Peterson house.....	356	08		2 miles.

PEAK.

General locality.—Northeast shore of Patuxent River, about in middle of inner shore of a large bay between St. Leonard and Island creeks. (See chart No. 19.)

Immediate locality.—Observed station is on Parran house, located near shore at extreme end of a road leading to Wallville.

Marks.—Observed station is ball on tip of tower.

References.—None necessary.

COLE.

General locality.—Southwest shore of Patuxent River, about one-fourth mile northwest of Cole Creek. (See chart No. 19.)

Immediate locality.—Observed station is about 35 feet above high-water mark on a grass peninsula, 3 yards south-southwest of edge of a bluff which is washing rapidly, 8 yards west of extreme edge of bluff, where it turns inland and is not washing, but slopes gradually to the water, 8 yards north of another edge of the bluff, 10 yards northwest of trees on slope of bank, and 20 yards west of a cherry tree 2 feet in diameter. Cement monument marking reference station is 13.53 meters S. 83° 10' W. of observed station and nearly on line with large cherry tree.

Marks.—Observed station is nail in stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hutchins" (S. 67° 12' E.).....	0	00	00	2 miles.
Left end of peak of roof on Jones Wharf house.....	6	25		1½ miles.
Nail in blaze on limb of oak tree (4 inches diameter).....	22	05		10.80 meters.
Screw in blaze in crotch of oak tree (15 inches diameter at base).....	38	18		12.67 meters.
Nail in blaze of cedar tree (6 inches diameter)...	63	40	40	8.43 meters.
Nail in blaze on cherry tree (24 inches diameter).....	147	11		18.65 meters.
REFERENCE STATION.....	150	22	00	13.53 meters.
Right chimney of house.....	179	11		¾ mile.
Right end of peak of roof of Forrest Wharf house.....	202	21		1½ mile.
Right end of house.....	251	05		3 miles.
Left end of peak of house.....	280	23		3 miles.
Gilt ball on Broome house.....	321	30	30	2 miles.
Right tangent of Broome Island.....	334	17		1¾ miles.

HUTCHINS.

General locality.—Southwest shore of Patuxent River opposite Broome Island on Captain Point, about one-fourth mile northwest of mouth of Cole Creek. (See chart No. 19.)

Immediate locality.—Observed station is in garden on point of a bluff 50 feet high on Hutchins estate near house occupied by Mr. Gadden, about 6 yards south by east of extreme point of bluff, 2 yards southwest of edge of bluff, 4 yards southeast of edge of bluff, 30 yards north by west from house, 30 yards west of a wire fence running north and south, and 15 yards east of another north-and-south wire fence. Cement monument marking reference station is 7.57 meters S. 59° 39' W. of observed station.

Marks.—Observed station is nail in a stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Bars" (S. 68° 07' E.)	0	00	00	7/8 mile.
Left corner of extension of Gadden house	58	17	..	30.90 meters.
Right front corner of Gadden house	84	56	..	28.57 meters.
Near corner of well house	102	15	..	30.44 meters.
Near corner of shed	119	43	..	45 yards.
REFERENCE STATION	127	46	..	7.57 meters.
Nail in blaze in apple tree (22 inches diameter)	148	06	20	9.35 meters.
Right tangent of Parkers Wharf	228	12	..	2 1/2 miles.
Gilt ball on Broome house on Broome Island	249	55	..	1 1/2 miles.
Near end of peak of house	263	17	..	4 miles.
Tip of tower on Peterson house	332	52	..	2 1/2 miles.

WHEAT.

General locality.—Northeast shore of Patuxent River on westerly side of mouth of St. Leonard Creek. (See charts Nos. 19 and 20.)

Immediate locality.—Observed station is on a bluff about 40 feet above high water, about 5 yards west of edge of bank, 7 yards south of another edge, and three-eighths mile west of Peterson house. Cement monument marking reference station is 12.80 meters N. 61° 55' E. of observed station and on line to Peterson house.

Marks.—Observed station is center of a 4-inch tile pipe set in cement with top projecting about 4 inches above ground. Reference station is center point of triangle on standard cement monument with top 6 inches below the surface.

References.—

	°	'	"	
"Stump" (S. 36° 23' E.)	0	00	00	2 1/4 miles.
Left chimney of Judge Crane house	10	07	..	4 3/4 miles.
Near end of peak of roof of Marburger house	15	05	..	4 1/4 miles.
Left end of roof of St. Cuthbert Wharf	24	09	..	2 1/4 miles.
Chimney on roof of house	60	05	..	1 1/2 miles.
Chimney on store at Sotterly	93	41	..	1 1/2 miles.
Left end of barn roof	193	27	..	2 miles.
REFERENCE STATION	278	17	30	12.80 meters.
Center chimney of Peterson house	281	22	..	1/4 mile.
Chimney of house	298	03	..	1/8 mile.
Chimney on house on Breeden estate	340	04	..	2 miles.

MACKALL.

General locality.—Northwest shore of Patuxent River on west side of entrance to St. Leonard Creek on first point inside of Peterson Point. (See charts Nos. 19 and 20.)

Immediate locality.—Observed station is about 50 feet above high water, 9 feet northwest of edge of bluff, 7 yards northeast of bushes, and 3 yards southwest of other bushes. Cement monument marking reference station is 3.80 meters N. 35° 08' W. of observed station.

Marks.—Observed station is the center of an oblong wooden box 4 inches square with top 3 inches above the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Stock" (S. 34° 38' W.).....	0	00	00	1¾ miles.
Peak of front gable of Bond house.....	0	39	10	1¾ miles.
Chimney on negro house.....	54	31	..	¾ mile.
Chimney on Peterson house.....	66	25	..	¼ mile.
REFERENCE STATION.....	110	13	50	3.80 meters.
Chimney on negro house.....	135	49	..	¾ mile.
Chimney on ell of house on hill.....	153	46	..	½ mile.
Chimney on small house back of Sollers				
Wharf.....	229	40	..	1 mile.
Nearest outside chimney on 1½-story house..	236	08	..	2 miles.
Large chimney on Sollers house.....	237	02	..	¾ mile.
Large chimney on Taylor house.....	285	27	..	¼ mile.
Front peak of Briscoe house.....	334	30	..	2½ miles.

SOLLERS.

General locality.—Northeast shore of Patuxent River on east side of entrance to St. Leonard Creek. (See charts Nos. 19 and 20.)

Immediate locality.—Observed station is about 50 feet above high water, 6 feet east of edge of bank, 20 yards north-northeast of a clump of trees, 14 yards and 8 yards south-southwest of other trees, and 75 yards north-northwest of a rail fence. Cement monument marking reference station is 13.68 meters S. 44° 00' E. of observed station with top buried 12 inches below surface.

Marks.—Observed station is the center of an oblong wooden box 5 inches square with top 3 inches above ground. Reference station is center point of triangle on standard cement monument with top 12 inches below surface.

References.—

	°	'	"	
"Stock" (S. 44° 24' W.).....	0	00	00	1½ miles.
Middle of front gable of Bond house.....	0	34	..	1¾ miles.
Chimney of store at Sotterly Wharf.....	26	58	..	2½ miles.
Near corner of outside chimney on house....	27	18	..	2½ miles.
Chimney on top of Gadden house.....	46	14	..	2½ miles.
Near corner of top chimney on Peterson				
house.....	78	27	..	½ mile.
Right end of peak of roof of Mackall house..	150	16	..	¼ mile.
REFERENCE STATION.....	271	35	30	13.68 meters.
Near corner of large chimney on Taylor				
house.....	372	35	..	¾ mile.
Top of front gable on Briscoe house.....	331	36	..	1¾ miles.

BARS.

General locality.—Southwest shore of Patuxent River on Sotterly Point about one-fourth mile north-west of Sotterly Wharf. (See chart No. 19.)

Immediate locality.—Observed station is on a bluff about 30 feet above high water, 5 yards south of edge of bank at rail fence, and 2 yards east of this same fence. Cement monument marking reference station is 14.53 meters S. 9° 54' W. of observed station and near fence line.

Marks.—Observed station is center of a 3-inch tile pipe set in cement. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Wheat" (N. 72° 06' E.).....	0	00	00	1½ miles.
Chimney on middle of 2½-story house.....	17	29	..	6 miles.
Windmill.....	23	23	..	3 miles.
Chimney of house.....	41	50	..	4 miles.
REFERENCE STATION.....	117	48	00	14.53 meters.
Smoke pipe on right end of house.....	157	37	..	¼ mile.
Tangent of point of land.....	250	47	..	1½ miles.
Peterson house chimney.....	359	22	..	1¾ miles.

LEND.

General locality.—Northeast shore of Patuxent River on a narrow strip of land or peninsula in mouth of Mears Creek about one-half mile southeast of St. Leonard Creek. (See charts Nos. 19 and 20.)

Immediate locality.—Observed station is in the midst of many cherry, oak, and locust trees about 15 feet above high-water mark, 15 yards east-northeast of high ground, 5 yards west of edge and 17 yards north of extreme point of top of peninsula.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Wheat" (N. 50° 51' W.).....	0	00	00	1¼ miles.
Nail in blaze in cherry tree (4 inches diameter).....	118	28	30	3.58 meters.
Right chimney of house across creek.....	139	51	..	¼ mile.
Nail in blaze in oak tree (8 inches diameter).....	229	51	..	6.68 meters.
Outside chimney on left end of Briscoe house.....	265	61	..	1½ miles.
Near peak of Bond house.....	297	57	..	1½ miles.
Chimney on storehouse at Sotterly.....	318	19	..	2¼ miles.
Near end of peak of roof of Sotterly Wharf house.....	319	07	..	2¼ miles.
Chimney on Gadden house.....	330	47	..	¾ miles.
Nail in blaze in cherry tree (6 inches diameter).....	345	24	..	3.64 meters.

STOCK.

General locality.—Southwest shore of Patuxent River about 1 mile southeast of Sotterly Point. (See chart No. 20.)

Immediate locality.—Observed station is on a bluff, about 20 feet above high water, 3 yards southwest of edge of bluff, about 50 yards east by north of front door of the house of Mr. Bond, 30 yards west-northwest of extreme end of point of bluff, 35 yards northeast of detached house, and about 43 yards east by south of yard fence at edge of bluff.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Lend" (N. 66° 48' E.).....	0	00	00	1½ miles.
Right chimney of house on Dickson place....	1	35	..	1¾ miles.
Right chimney of old 1½-story house.....	19	00	..	2 miles.
Tangent of bluff.....	58	00	..	1 mile.
Chimney on house on point.....	59	03	..	1 mile.
Nail in blaze in locust tree (4 inches diameter).....	99	48	30	2.18 meters.
Nearest corner of outhouse, corner farthest from house.....	161	29	30	34.30 meters.
Left corner of house.....	180	31	30	31.13 meters.
Nail in blaze in cherry tree 1 foot above ground (4 feet diameter).....	183	39	30	20.58 meters.
Right corner of house.....	205	29	40	45.79 meters.
Locust tree (4 inches diameter).....	210	31	40	8.83 meters.
End of yard fence.....	230	31	..	43 yards.
Tree near edge of bank (no nail or blaze)....	237	39	20	34.27 meters.

STUMP.

General locality.—Northeast shore of Patuxent River about one-half mile northwest of Hellen Creek. (See chart No. 20.)

Immediate locality.—Observed station is on a bank about 20 feet above high water, 10 yards north-northeast of edge of bank at extreme end of point, about 20 yards southeast of edge of bank, and about 150 yards northwest of a clump of cedar and locust trees at edge of bank. Cement monument marking first reference station is 11.29 meters N. $61^{\circ} 51'$ E. of observed station with top 10 inches below surface of field. Cement monument marking second reference station is 2.62 meters N. $60^{\circ} 42'$ E. of observed station about on line with first reference station.

Marks.—Observed station is center of 4-inch tile pipe set in cement with top flush with ground. First reference station is center point of triangle on standard cement monument with top 10 inches below the surface of ground. Second reference station is center point of triangle on standard cement monument with top 6 inches above surface of ground.

References.—

	°	'	"	
"Wheat" (N. $36^{\circ} 23'$ W.).....	0	00	00	2½ miles.
Chimney in center of house.....	15	09	..	¾ mile.
SECOND REFERENCE STATION.....	97	43	35	2.62 meters.
FIRST REFERENCE STATION.....	98	52	30	11.29 meters.
Apple tree.....	152	00	..	200 yards.
Left chimney of house.....	180	19	..	¾ mile.
Near end of peak of roof of Marburger house..	209	27	..	2¼ miles.
Left chimney of house.....	269	21	..	1¼ miles.
Nail in blaze in stump (30 inches diameter)..	250	49	..	5.01 meters.
Nail in blaze in tree (8 inches diameter)....	352	30	..	17.52 meters.

BRISCOE.

General locality.—Southeast shore of Patuxent River about one-fourth mile northwest of St. Cuthbert Wharf. (See chart No. 20.)

Immediate locality.—Observed station is in a cultivated field, about 20 feet above high water, 80 yards southwest of trees on bank, 50 yards southeast of a creek bed, 46 yards northwest of a clump of trees, 105 yards east of a corner of fence on road, and about 300 yards northeast of another fence with woods back of it. Cement monument marking reference station is 12.52 meters N. $79^{\circ} 35'$ W. of observed station.

Marks.—Observed station is a nail in a stub with top flush with ground and a subsurface mark of a standard cement monument with top buried 11 inches below the surface. Reference station is center of triangle on standard cement monument with top 5 inches above surface of ground.

References.—

	°	'	"	
"Hellen" (S. $71^{\circ} 37'$ E.).....	0	00	00	1½ miles.
Near corner of house.....	45	11	..	¾ mile.
Left end of peak of roof of barn.....	57	18	..	¾ mile.
Large two-forked tree.....	129	17	..	130 yards.
Corner of rail fence and tree.....	136	34	..	105 yards.
REFERENCE STATION.....	172	01	40	12.52 meters.
Large cherry tree other side of creek.....	195	00	..	68 yards.
Left chimney of house on opposite side with three dormer windows.....	304	54	..	1½ miles.
Cedar tree.....	308	59	..	80 yards.

HELLEN.

General locality.—Northeast shore of Patuxent River on east side of mouth of Hellen Creek. (See chart No. 20.)

Immediate locality.—Observed station is at high-water mark on edge of grass and bushes, about 16 yards west-southwest of a bluff 15 feet high, and about 40 yards north-northwest of bluff at edge of water. Cement monument marking reference station is 12.45 meters N. $75^{\circ} 14'$ E. of observed station.

Marks.—Observed station was the center of a tile pipe with a subsurface mark of a green yeast-powder bottle, but at date of publication these marks are reported to have been washed away. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Stump" (N. 25° 42' W.).....	0	00	00	7/8 mile.
Left chimney of Barrett house.....	8	54	..	3/4 mile.
Nail in blaze in tree.....	100	01	40	14.74 meters.
REFERENCE STATION.....	100	56	20	12.45 meters.
Near end of peak of roof of Marburger house..	209	54	..	1 1/2 miles.
Mouth of Cuckold Creek.....	261	00	..	1 1/2 miles.
Chimney of Peterson house.....	355	14	..	3 miles.

NAT.

General locality.—Southwest shore of Patuxent River about one-half mile above mouth of Cuckold Creek. (See chart No. 20.)

Immediate locality.—Observed station is near edge of a cultivated field on a bluff of sand and gravel about 20 feet above high water, 4 feet east of edge of bluff, and 150 yards north of a rail fence. Cement monument marking reference station is 18.44 meters S. 29° 47' W. of observed station with top 8 inches below surface of ground.

Marks.—Observed station is center of 3-inch tile pipe embedded in cement. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hellen" (N. 69° 29' E.).....	0	00	00	1 1/4 miles.
Near end of peak of roof of Marburger house				
on Point Patience.....	68	01	..	1 1/2 miles.
REFERENCE STATION.....	140	18	00	18.44 meters.
Large chimney on house.....	281	58	..	3 miles.
Right chimney of house with two gable				
roofs.....	309	01	..	2 miles.

TON.

General locality.—Eastern shore of Patuxent River about 1 mile northeast of Point Patience. (See chart No. 20.)

Immediate locality.—Observed station is on a bluff about 15 feet above high water, 10 yards east from edge of bluff, 50 yards south-southwest of edge of a gully and a clump of trees, and about 220 yards west-northwest of a cherry tree 3 1/2 feet in diameter. Cement monument marking reference station is 13.64 meters S. 62° 20' E. of observed station.

Marks.—Observed station is a spike set in cement. Reference station is center point of triangle on standard cement monument buried below surface 10 inches.

References.—

	°	'	"	
"Mill" (N. 65° 00' W.).....	0	00	00	1 1/4 miles.
Chimney on far end of Wallace house.....	53	28	..	1 3/4 miles.
Chimney on middle of roof on McCorry				
store.....	60	09	..	2 miles.
Near end of peak of St. Cuthbert Wharf				
house.....	62	10	..	2 miles.
Near end of peak of roof of Parran oyster				
watch house.....	83	03	..	5 1/2 miles.
Chimney on Peterson house.....	85	39	..	3 3/4 miles.
Cemented chimney on near end of George				
old house.....	94	59	..	1 mile.
Left chimney of Costen house.....	117	59	..	1/2 mile.
Nail in blaze in tree.....	137	35	20	47.60 meters.
REFERENCE STATION.....	232	31	00	13.64 meters.
Left chimney of Marburger house.....	329	11	..	3/4 mile.

MILL.

General locality.—Southwest shore of Patuxent River about one-half mile southeast of mouth of Cuckold Creek and one-half mile northwest of Point Patience. (See chart No. 20.)

Immediate locality.—Observed station is on a sand bluff about 20 feet above high water, 7 yards southwest of the edge of the bluff, 40 yards southeast of a fence and a line of cedar trees, and about 100 yards northwest of another fence at bottom of hill. Cement monument marking reference station is 13.76 meters S. $28^{\circ} 14'$ W. of observed station.

Marks.—Observed station is center point of 3-inch tile pipe embedded in cement. Reference station is center point of triangle on standard cement monument.

References.—	°	'	"	
"Ton" (N. $64^{\circ} 59'$ E.).....	0	00	00	1¼ miles.
Nearest chimney of Marburger house on				
Point Patience.....	39	01	..	¾ mile.
"Catholic Church Cross".....	43	03	40	2 miles.
"Methodist Episcopal Church Spire".....	49	23	30	2 miles.
Middle of portico of Judge Crane house.....	82	22	..	1 mile.
Windmill near Dent house.....	136	47	..	½ mile.
REFERENCE STATION.....	143	14	40	13.76 meters.
Chimney on house among farm buildings....	293	28	40	4¾ miles.
Left chimney on house with piazza.....	304	02	..	2¾ miles.
End of peak of roof of 2½-story house.....	323	31	..	1¾ miles.
Nearest chimney of cottage.....	338	17	..	2 miles.
Left chimney of house.....	340	19	..	2 miles.

BUR.

General locality.—East shore of Patuxent River, on northwest side of Point Patience, about one-fourth mile northeast of its extreme end. (See chart No. 20.)

Immediate locality.—Observed station is on sand and grass land, about 1 foot above high water, 12 yards southeast of high-water mark on one side of point, 36 yards northwest of high-water mark on other side of point, and about 300 yards northeast of extreme end of point. Cement monument marking reference station is 12.15 meters N. $85^{\circ} 20'$ E. of observed station.

Marks.—Observed station is a 3-inch tile pipe set in cement with top about 1 inch above the surface of the ground. Reference station is center point of triangle on standard cement monument.

References.—	°	'	"	
"Ton" (N. $37^{\circ} 56'$ E.).....	0	00	00	1 mile.
Left chimney of Marburger house.....	16	08	..	¾ mile.
REFERENCE STATION.....	47	24	30	12.15 meters.
"Methodist Episcopal Church Spire".....	75	32	10	1¾ miles.
Middle gable of Judge Crane house.....	139	09	..	½ mile.
Nail in blaze in pine tree (8 inches diameter).....	162	40	10	25.04 meters.
Square chimney on Dent house.....	228	30	..	¾ mile.
Chimney on house.....	268	52	..	1¾ miles.
Left chimney of house.....	346	39	..	1½ miles.
Right chimney of house.....	358	31	..	1½ miles.

NEW.

General locality.—Northeast side of Patuxent River, about three-fourths mile east of Point Patience and about 1¼ miles northwest of Sandy Point. (See chart No. 20.)

Immediate locality.—Observed station is about 20 feet above high-water mark in the middle of a cultivated field on Strathmore farm, about 230 yards northeast of shore of Patuxent River, about 82 yards southeast of a creek, about 162 yards northwest of a small creek or ditch, 230 yards northeast of a large oak tree, and 250 yards north of another large oak tree.

Marks.—Observed station is center point of triangle on standard cement monument with top 11 inches below the surface of the ground.

References.—

	°	'	"	
"Ben" (S. 2° 10' E.)	0	00	00	2 miles.
Chimney on flat-roof house	6	59		1¾ miles.
Chimney on main part of a house on Town Creek	27	11		1¼ miles.
Oak tree about 18 inches diameter on edge of field	43	54		227 yards.
Right tangent of Spencers Wharf	56	04		1 mile.
Corner of field	67	00		310 yards.
Exposed chimney on left of house	67	36		1½ miles.
Left chimney on house	88	57		1½ miles.
Corner of field	206	00		240 yards.
Corner of field	258	00		300 yards.
Silver-tipped tower on Philip Vale house	307	08	20	½ mile.
Oak at edge of field	343	35		300 yards.

CATHOLIC CHURCH CROSS.

General locality.—Southeast side of Patuxent River, about halfway to Back Creek and three-fourths mile northwest of Solomons Wharf. (See chart No. 20.)

Immediate locality.—Observed station is on Catholic Church, known as St. Marys Star of the Sea, located in small village of Johnstown, on mainland near Solomons Island, and about 250 yards north of causeway to Solomons Island.

Marks.—Observed station is center of cross on bell cupola.

References.—None necessary.

CABLE.

General locality.—Southwest shore of Patuxent River, on east side of entrance to Kings Creek, and about three-fourths mile west of Town Point. (See chart No. 20.)

Immediate locality.—Observed station is on pasture land near the end of high land at the beginning of a long, low peninsula which almost closes the mouth of Kings Creek, about 30 feet above high-water mark, about 20 yards south of edge of bank on river side, about 15 yards east northeast of edge of bank on creek side, 38 yards southeast of extreme edge of top of bank, and 30 yards west of a persimmon tree.

Marks.—Observed station is center point of triangle on standard cement monument buried with top 10 inches below the surface of ground.

References.—

	°	'	"	
"Bur" (N. 35° 17' E.)	0	00	00	¾ mile.
Left chimney of Marburger house near Point Patience	3	25		¾ mile.
"Catholic Church Cross"	43	59		1¾ miles.
"Methodist Episcopal Church Spire"	52	29		1¾ miles.
Left chimney of Judge Crane house	55	44		½ mile.
Nail in blaze of tree (18 inches diameter)	179	22	20	19.24 meters.
Nail in blaze in red cedar tree (3 inches diameter)	236	25		16.80 meters.
Nail in blaze in persimmon tree	283	52	10	26.22 meters.
Right chimney on Fenner Lee house	284	14		¾ mile.
Left chimney of house	302	24		½ mile.

TOWN.

General locality.—Southwestern shore of Patuxent River, on Town Point, about three-fourths mile southeast of Point Patience. (See chart No. 20.)

Immediate locality.—Observed station is about 20 feet above high-water mark, 9 yards west of edge of bluff, 3 yards south of edge of bluff, 10 yards southeast of extreme edge of high land, 3 yards south of a rail fence, and 2 yards north of cultivated land.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Back".....	0	00	00	1½ mile.
"Catholic Church Cross".....	8	58	20	1 mile.
"Methodist Church spire".....	25	41	20	¾ mile.
Cupola on Files store.....	29	11		¾ mile.
Nearest chimney on Webster house.....	43	06		1¼ miles.
Right end of roof of 2½-story building at Pearsons.....	67	56		3 miles.
Near corner of tower on Hodgdon house.....	93	01		2¾ miles.
Chimney on old house.....	108	18		1¾ miles.
Chimney on house.....	142	53		1 mile.
Left chimney on Lee house.....	227	04		1½ miles.
Marburger house.....	281	00		¾ mile.

CRANE.

General locality.—Southwest side of Patuxent River, on northeast side of Town Creek, about one-fourth mile southwest of Town Point. (See chart No. 20.)

Immediate locality.—Observed station is in a cultivated field on Judge Crane farm, about 8 feet above high-water mark, 58 yards east-northeast of Town Creek, 105 yards west of a fence, 115 yards west-northwest of a large cherry tree, 200 yards southeast of several detached buildings, and 20 yards east of top of ravine.

Marks.—Observed station is center point of triangle on standard cement monument with top 10 inches below ground.

References.—

	°	'	"	
"New" (N. 36° 51' E.).....	0	00	00	1 mile.
"Catholic Church Cross".....	29	25		1¼ miles.
Stack on ice plant.....	37	25		1¼ miles.
Methodist Episcopal Church tower.....	42	15		1¼ miles.
Cherry tree (4 feet diameter).....	71	26		115 yards.
Canning-house stack.....	157	27		¼ mile.
House on point.....	185	20		¼ mile.
Chimney on house.....	244	30		¾ mile.
Lightning rod on cupola of Judge Crane barn.....	277	01	30	¼ mile.
Right tangent to St. Cuthbert wharf.....	300	08		2¾ miles.
Near end of peak of roof of Marburger house.....	320	49		¾ mile.
Middle of gateway.....	355	23		½ mile.
Oak tree on opposite shore of Patuxent River.....	359	16	50	1 mile.

METHODIST EPISCOPAL CHURCH (SOLOMONS).

General locality.—Northeastern shore of Patuxent River, on upper end of Solomons Island, about one-half mile northwest of Sandy Point. (See chart No. 20.)

Immediate locality.—Observed station is on Methodist Church at upper end of Solomons Island near beginning of causeway to mainland.

Marks.—Observed station is tip of pyramidal tower on Methodist Church.

References.—None necessary.

KNIGHTS OF PYTHIAS FLAGSTAFF (SOLOMONS).

General locality.—Northeastern side of Patuxent River, on Solomons Island, in the town of Solomons. (See chart No. 20.)

Immediate locality.—Observed station is on flagstaff in front of Knights of Pythias Building.

Marks.—Observed station is center of flagstaff at about the same height as roof of the Knights of Pythias hall.

References.—None necessary.

SAND.

General locality.—Northeastern side of Patuxent River on Sandy Point on extreme southern point of Solomons Island. (See chart No. 20.)

Immediate locality.—Observed station is on pasture land about 5 feet above high water, 30 yards north of extreme point of planking protecting the shore from washing, 15 yards northeast of the extreme edge of sand and grass line, and about 13 yards east of top of bank. Cement monument marking reference station is 13.64 meters N. $2^{\circ} 19' E.$ of observed station.

Marks.—Observed station is nail in southwest side of a 6-inch pile driven into ground with top 6 inches above the surface. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Drum Point Light" (N. $83^{\circ} 57' E.$).....	0	00	00	2 miles.
Right tangent of woods on Hog Point.....	14	36	..	3 miles.
Left end of peak of roof on $2\frac{1}{2}$ -story building at Pearsons.....	51	03	..	2 miles.
Chimney on storehouse at Millstone.....	74	18	..	$1\frac{3}{4}$ miles.
Near point of gable of Hodgdon large house with square tower.....	93	54	..	$1\frac{1}{2}$ miles.
Near end of peak of roof of Marburger house..	225	22	..	$1\frac{3}{4}$ miles.
Warren house opposite Johnson store.....	261	22	..	$\frac{1}{4}$ mile.
REFERENCE STATION.....	278	22	10	13.64 meters.
"Knights of Pythias flagstaff".....	291	58	..	$\frac{1}{4}$ mile.
Right chimney of Dr. Marsh house.....	320	38	..	$\frac{1}{8}$ mile.
"Bareda House Cupola".....	347	48	30	$1\frac{1}{2}$ miles.

FISHSTACK.

General locality.—Northeastern side of Patuxent River on northeastern side of entrance to Mill and Back creeks. (See chart No. 20.)

Immediate locality.—Observed station is on mainland on fish fertilizer factory located on opposite side of creek from Solomons Island.

Marks.—Observed station is center of smokestack on fish factory.

References.—None necessary.

BON.

General locality.—North shore of Patuxent River about $1\frac{1}{4}$ miles west-northwest of Drum Point Light and about $\frac{1}{2}$ mile east-northeast of Solomons Island. (See chart No. 20.)

Immediate locality.—Observed station is on cultivated land, about 5 feet above high water, about 7 yards north of shore, about 90 yards southeast of a $1\frac{1}{2}$ -story house on land 10 feet higher than station, and about 75 yards south of a $1\frac{1}{2}$ -story brick house. Cement monument marking reference station is 0.67 meter N. $45^{\circ} 29' E.$ of observed station.

Marks.—Observed station is an inverted nail in center of cement in a 6-inch tile pipe with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Drum Point Light" (S. $73^{\circ} 43' E.$).....	0	00	00	$1\frac{1}{4}$ miles.
Smoke pipe on oyster watch house.....	33	32	..	$\frac{1}{2}$ mile.
Left end of peak of roof on $2\frac{1}{2}$ -story building at Pearsons.....	52	06	..	$2\frac{1}{4}$ miles.
Left end of peak of roof on house with piazza.	82	29	..	$2\frac{1}{2}$ miles.
Near point of roof of Hodgdon house with square tower.....	89	14	..	$2\frac{1}{4}$ miles.
Chimney on end of house.....	133	57	..	$\frac{3}{4}$ mile.
Left chimney on Weems house.....	159	37	..	$\frac{1}{4}$ mile.

References—Continued.

	°	'	"	
Right chimney on wooden house.....	224	01	..	90 yards.
Left side of chimney on brick house.....	249	54	..	75 yards.
REFERENCE STATION.....	299	12	00	0.67 meters.
Near end of peak of house on bluff between trees.....	336	50	..	½ mile.
"Bareda House cupola".....	347	06	..	¾ mile.

BAREDA HOUSE CUPOLA.

General locality.—North side of Patuxent River about one-half mile northwest of Drum Point Light. (See chart No. 20.)

Immediate locality.—Observed station is on Bareda House which is a large 3-story square mansion with square cupola with three windows on each side and a porch all around ground floor, located about 100 yards back from shore on high land.

Marks.—Observed station is center of ornamental design of four brackets on center of cupola.

References.—None necessary.

DRUM POINT LIGHT.

General locality.—Northeastern side of entrance of Patuxent River and a short distance off shore from Drum Point. (See chart No. 20.)

Immediate locality.—Observed station is on a screw pile structure known as Drum Point Lighthouse.

Marks.—Observed station is center of black lantern on Drum Point Lighthouse.

Reference.—

	°	'	"	
"Cedar Point Light" (S. 64° 33' E.).....	0	00	00	3¼ miles.

BEN.

General locality.—Southwestern shore of Patuxent River about 1 mile south-southwest of Sandy Point and 1¼ miles south-southeast of Town Point. (See chart No. 20.)

Immediate locality.—Observed station is on a clay and sand bluff in a cultivated field, about 20 feet above high-water mark, about 10 feet west of edge of bank, 3 feet south of point covered with scrub pines, about 15 yards northeast of one edge of plateau, 10 yards southeast of another edge of plateau, about 65 yards north of point of woods, and 10 yards south of cut in bank which is washing rapidly. Cement monument marking reference station is 8.42 meters S. 56° 15' W. of station.

Marks.—Observed station is nail in cement in 6-inch tile pipe with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Drum Point Light" (N. 68° 07' E.).....	0	00	00	2¾ miles.
Left tangent of trees on Hog Point.....	16	21	..	3¾ miles.
Near end of peak of roof of large 2½-story building at Pearsons.....	39	36	..	2¼ miles.
Near piazza post of Millstone Hotel.....	56	11	..	1¾ miles.
Chimney of Craddock house.....	60	28	..	1¼ miles.
Chimney on end of cabin.....	97	24	..	200 yards.
Tall pine tree.....	138	35	..	50 yards.
REFERENCE STATION.....	168	08	00	8.42 meters.
Nail in blaze in pine tree (4 inches diameter). .	176	33	50	7.79 meters.
Nail in blaze in pine tree (4 inches diameter). .	223	40	40	8.77 meters.
Nail in blaze in pine tree (4 inches diameter). .	236	39	..	2.07 meters.
Near end of peak of roof of Marburger house..	272	12	..	2 miles.
"Catholic Church Cross".....	304	54	40	1½ miles.
"Bareda House Cupola".....	350	34	40	2¼ miles.

CRADDOCK.

General locality.—Southern shore of Patuxent River, about $2\frac{3}{8}$ miles south-southeast of Drum Point Light and $\frac{1}{4}$ mile west of Millstone Landing. (See chart No. 20.)

Immediate locality.—Observed station is on lawn about 15 feet above high-water mark, about 10 yards south from top edge of bank, 15 yards from bottom edge of bank and fence, 30 yards east of extreme edge of point, 30 yards northeast of trees along shore of pond, about 110 yards northwest of Craddock house and several outbuildings among poplar trees, 50 yards east of fence, and 70 yards west of driveway to house.

Marks.—Observed station is center point of triangle on standard cement monument, with top flush with lawn.

References.—

	°	'	"	
"Drum Point Light" (N. $37^{\circ} 15'$ E.).....	0	00	00	$2\frac{1}{2}$ miles.
Left tangent of woods on Carroll Point.....	21	52	..	$1\frac{3}{4}$ miles.
Near end of peak of roof of $2\frac{1}{2}$ -story building at Pearsons.....	42	25	..	$1\frac{1}{4}$ miles.
Chimney on hotel at Millstone.....	64	56	..	$\frac{1}{2}$ mile.
Cottonwood tree (14 inches diameter).....	68	54	..	80 yards.
Chimney on roof of Craddock $2\frac{1}{2}$ -story house.....	95	27	..	110 yards.
Nail in stump (14 inches diameter).....	309	25	50	5.35 meters.
"Fishstack".....	317	30	50	2 miles.

CARROLL 2.

General locality.—South side of Patuxent River, about 1 mile south-southwest of Hog Point and about 1 mile south of Drum Point Light. (See chart No. 20.)

Immediate locality.—Observed station is on a sandy clay bluff in a cultivated field, about 50 feet above high-water mark, 4 feet south of top edge of bluff, 180 yards east of trees and ravine beyond cultivated field, 60 yards west of trees and ravine beyond cultivated field, 300 yards north of large square chimney on old-fashioned farmhouse, and 250 yards north of large tree to right of farmhouse. Cement monument marking reference station is 13.32 meters S. $54^{\circ} 30'$ W. of observed station. Another reference station is a nail in the east side of cement in a 6-inch tile pipe 14.64 meters S. $13^{\circ} 20'$ E. of observed station and on range with Drum Point Light.

Marks.—Observed station is center of 5-inch tile pipe with top 8 inches below surface of ground. Reference station is nail in cement on east side of a 6-inch tile pipe with top 6 inches below surface of ground. Another reference station is center point of triangle on standard cement monument with top 9 inches below surface of ground.

References.—

	°	'	"	
"Drum Point Light" (N. $13^{\circ} 20'$ W.).....	0	00	00	1 mile.
Left tree on Hog Point.....	81	59	40	1 mile.
Right of bushes at edge of ravine.....	142	00	..	75 yards.
Tree (12 inches diameter).....	164	48	..	$\frac{1}{8}$ mile.
REFERENCE STATION (tile).....	179	59	45	14.64 meters.
Tree (20 inches diameter).....	183	25	..	$\frac{1}{8}$ mile.
Chimney of Susquehanna farmhouse.....	192	10	..	300 yards.
Large tree.....	199	08	..	250 yards.
REFERENCE STATION (monument).....	247	50	00	13.32 meters.
Right chimney of Fenner Lee house.....	302	45	..	$4\frac{1}{2}$ miles.
Center of four-sided roof on Dr. Marsh house.....	307	58	..	$2\frac{1}{4}$ miles.
"Catholic Church Cross".....	315	32	00	$2\frac{3}{4}$ miles.
Silver tip on tower of Vale house.....	316	15	30	3 miles.
Chimney of Bowen house.....	327	16	..	2 miles.
"Bareda House Cupola".....	348	44	00	$1\frac{1}{2}$ miles.

HOG 2.

General locality.—Southern shore of entrance to Patuxent River on Hog Point, about $1\frac{1}{8}$ miles west-northwest of Cedar Point Light. (See chart No. 20.)

Immediate locality.—Observed station is on a sand beach at high-water mark, 30 yards northwest of point of woods, and 200 yards north-northeast of nearest shore of Parsons Creek. Cement monument marking reference station is 33.35 meters S. $42^{\circ} 22'$ E. of observed station on a point of high land.

Marks.—Observed station is nail set in cement in a 6-inch tile pipe, with top 1 foot below the surface. Reference station is center point of triangle on standard cement monument.

References.—

	0	0	00	1 1/4 miles.
"Drum Point Light" (N. $60^{\circ} 44'$ W.).....	0	00	00	1 1/4 miles.
"Bareda House Cupola"	2	44	50	1 1/2 miles.
Chimney of cabin on opposite shore.....	22	20	..	1 1/2 miles.
Tangent of Little Cove Point.....	71	56	..	3 1/2 miles.
"Cedar Point Light".....	173	31	40	2 miles.
REFERENCE STATION.....	198	21	50	33.35 meters.
Nail in blaze in pine tree.....	201	03	..	29.58 meters.
Cabin on opposite side of Parsons Creek.....	243	05	..	3/4 mile.
Chimney on Susquehanna farmhouse.....	301	04	..	1 mile.
"Methodist Episcopal Church" (Solomons).....	346	16	40	3 1/2 miles.
Steeple of Vale house at Avondale.....	350	55	..	3 1/2 miles.

PAT.

General locality.—Western shore of Chesapeake Bay on Little Cove Point, about $1\frac{3}{4}$ miles south by west of Cove Point Light. (See chart No. 20.)

Immediate locality.—Observed station is on the highest point of a thickly wooded bluff, about 75 feet above high-water mark, 4 yards west of edge of bluff, and 15 yards southwest of extreme point. Cement monument marking reference station is 24.57 meters S. $71^{\circ} 26'$ W. of observed station.

Marks.—Observed station is a 3-inch round stake set in cement, with top about 4 inches above surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	0	00	00	4 1/2 miles.
"Cedar Point Light" (S. $13^{\circ} 54'$ E.).....	0	00	00	4 1/2 miles.
Near piazza post of house.....	14	52	..	4 miles.
REFERENCE STATION.....	85	20	00	24.57 meters.
Spike in blaze in tree (5 inches diameter)...	94	51	..	6.54 meters.
Spike in blaze in tree (5 inches diameter)...	114	10	..	3.42 meters.
Spike in blaze in tree (17 inches diameter)...	138	54	..	12.26 meters.
Spike in blaze in tree (13 inches diameter)...	181	46	..	5.50 meters.
"Cove Point Light".....	203	25	30	1 3/4 miles.
"Hoopers Island Light".....	327	58	10	10 1/4 miles.

WHITE HOUSE (NORTHEAST CHIMNEY).

General locality.—Western shore of Chesapeake Bay about 1 mile southwest of Cove Point Light and $\frac{1}{4}$ mile southwest of Cove Point Landing. (See chart No. 20.)

Immediate locality.—Observed station is a chimney standing alone about 300 yards southwest of Cove Point Landing which was formerly the more northeasterly of two chimneys on a house that was destroyed by fire. This chimney is near a white house which was built to replace the destroyed house.

Marks.—A chimney standing apart from a small white house owned by Mrs. Hagland.

References.—

	0	00	00	1 mile.
"Cove Point Light" (N. $39^{\circ} 54'$ E.).....	0	00	00	1 mile.

COVE POINT LIGHT.

General locality.—Western shore of Chesapeake Bay on Cove Point, which is about 5 miles to northward of entrance to Patuxent River. (See chart No. 20.)

Immediate locality.—Observed station is on white tower known as Cove Point Light, which is near white detached dwelling and white detached fog-signal house.

Marks.—Observed station is center point of black lantern on white tower.

References.—

	0	00	00	6 miles.
"Cedar Point Light" (S. $7^{\circ} 16'$ E.).....	0	00	00	6 miles.

CEDAR POINT LIGHT.

General locality.—Western shore of Chesapeake Bay on Cedar Point, $3\frac{3}{4}$ miles east-southeast of Drum Point Light and 6 miles south by east of Cove Point Light. (See chart No. 20.)

Immediate locality.—Observed station is on a brick dwelling known as Cedar Point Lighthouse.

Marks.—Observed station is center point of lantern on Cedar Point Lighthouse.

Reference.—

"Cove Point Light" (N. 7° $16'$ W.)..... 0 00 00 6 miles.

CAIN.

General locality.—Western shore of Chesapeake Bay, about $1\frac{5}{8}$ miles southwest of Cedar Point Light. (See charts Nos. 20 and 21.)

Immediate locality.—Observed station is on a bank about 5 feet above high-water mark, about 20 yards northwest of ordinary high water, 5 yards northwest of extreme high water, 100 yards southwest of old-fashioned house among several large trees, and about 250 yards below small wharf and canning house. Cement monument marking reference station is 6.45 meters N. 16° $56'$ E. of observed station.

Marks.—Observed station is a nail set in cement in a 3-inch pipe with top about 2 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	0	'	"	
"Cedar Point Light" (N. 46° $45'$ E.).....	0	00	00	1 $\frac{5}{8}$ miles.
Steeple on church.....	28	26	..	9 $\frac{1}{2}$ miles.
"Hooper Island Light".....	56	28	40	7 $\frac{3}{4}$ miles.
"Point No Point Light".....	106	05	..	11 $\frac{3}{4}$ miles.
Right chimney on Tarleton house.....	135	12	..	3 $\frac{1}{2}$ miles.
Near end of peak of 2-story house.....	148	41	..	1 $\frac{3}{4}$ miles.
REFERENCE STATION.....	330	10	40	6.45 meters.
Near corner of house.....	335	13	..	100 yards.
Aspen tree in house yard.....	339	35	50	100 yards.

DESERT.

General locality.—Western shore of Chesapeake Bay, about 3 miles south-southwest of Cedar Point Light. (See charts Nos. 20 and 21.)

Immediate locality.—Observed station is on sand and grass land, about 25 yards west from ordinary high-water mark, about at level of extreme high-water mark, 40 yards south of a fence, 10 yards east of a fence, 45 yards south of a creek, about 50 yards north of point of pine woods, and about 300 yards east of woods across marsh. Cement monument marking reference station is 5.29 meters N. 31° $24'$ W. of observed station.

Marks.—Observed station is a 4-inch tile pipe projecting about 2 inches above surface of sand. Reference station is center point of triangle on standard cement monument.

References.—

	0	'	"	
"Cedar Point Light" (N. 34° $05'$ E.).....	0	00	00	3 miles.
Steeple on church.....	34	19	40	10 $\frac{1}{2}$ miles.
"Hooper Island Light".....	59	08	40	8 miles.
"Point No Point Light".....	113	27	30	11 miles.
Near end of peak of roof of Tarleton house... ..	135	09	..	2 miles.
Point of woods.....	146	00	..	50 yards.
Nail in blaze in pine tree (14 inches diameter)	294	30	40	7.62 meters.
REFERENCE STATION.....	294	30	40	5.29 meters.
Chimney on near end of house.....	336	38	..	$\frac{1}{2}$ mile.
Large square chimney on larger of two houses.....	344	48	..	1 mile.

HOOPER ISLAND LIGHT.

General locality.—Eastern side of Chesapeake Bay off shore about $3\frac{1}{2}$ miles west of Hooper Island and 4 miles south of Barren Island. (See chart No. 21.)

Immediate locality.—Observed station is on Hooper Island Lighthouse.

Marks.—Observed station is center point of lantern on conical tower on cylindrical foundation known as Hooper Island Lighthouse.

References.—

	°	'	"	
"Cedar Point Light" (N. $65^{\circ} 04'$ W.)	0	00	00	7 miles.

FORD.

General locality.—Western shore of Chesapeake Bay about $1\frac{3}{4}$ miles south of entrance to Pine Hill Run and $7\frac{3}{4}$ miles west of Hooper Island Light. (See chart No. 21.)

Immediate locality.—Observed station is in a garden about 25 feet above high water, 32 yards west of edge of bank, 40 yards northeast of near corner of a house, 4 yards north of a wire fence, 33 yards north of a paling fence, and 38 yards south of another paling fence.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cedar Point Light" (N. $17^{\circ} 01'$ E.)	0	00	00	$4\frac{1}{2}$ miles.
"Hooper Island Light"	62	59	20	$7\frac{3}{4}$ miles.
OLD REFERENCE MARK (nail in tile pipe)	112	28	05	30.26 meters.
"Point No Point Light"	126	25	50	10 miles.
Nail in damson tree (5 inches diameter)	203	25	30	4.76 meters.
Chimney of Ford house	238	00	..	42 yards.
Peak of barn	292	11	..	76 yards.
Near peak of barn	331	37	..	2 miles.
Left chimney of house	339	20	..	3 miles.
Chimney on end of house	345	10	..	$3\frac{1}{2}$ miles.
Near peak of barn	353	00	..	4 miles.

REED.

General locality.—Western shore of Chesapeake Bay about $6\frac{1}{4}$ miles south of Cedar Point Light, $6\frac{3}{4}$ miles northwest of Point No Point Light, and $7\frac{5}{8}$ miles west-southwest of Hooper Island Light. (See chart No. 21.)

Immediate locality.—Observed station is about 10 feet above high water, 7 yards west of edge of bluff, 65 yards north-northeast of a house, 35 yards south of a fence, 45 yards north of another fence, 45 yards northwest of a large cedar tree on edge of bluff, and 35 yards north of a line of fruit trees. Cement monument marking reference station is on a line of fruit trees 34.13 meters S. $10^{\circ} 11'$ E. of observed station.

Marks.—Observed station is a cement block with gray iron core and nail in top. Block was formerly square, but has been broken off by plow. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cedar Point Light" (N. $2^{\circ} 25'$ E.)	0	00	00	$6\frac{1}{2}$ miles.
"Hooper Island Light"	59	18	10	$7\frac{5}{8}$ miles.
"Point No Point Light"	136	59	10	$6\frac{3}{4}$ miles.
Cedar tree (2 feet diameter)	140	30	..	45 yards.
Pear tree	163	59	..	35 yards.
REFERENCE STATION	167	23	40	34.13 meters.
Cherry tree	202	11	..	50 yards.
Near corner of house	207	16	..	65 yards.
Near peak of roof of house	289	35	..	200 yards.
Right chimney of Tarleton house	331	54	..	$2\frac{3}{8}$ miles.
Near chimney of $1\frac{1}{2}$ -story house	336	36	..	4 miles.
Near peak of Fenwick house	347	09	..	$5\frac{1}{2}$ miles.

POINT AGIN.

General locality.—Western shore of Chesapeake Bay about $4\frac{3}{4}$ miles northwest of Point No Point Light, $8\frac{3}{4}$ miles south of Cedar Point Light, and $7\frac{3}{4}$ miles southwest of Hooper Island Light. (See chart No. 21.)

Immediate locality.—Observed station is near edge of dense pine woods about 5 feet above high water, 6 yards southwest of edge of bank, 10 yards south of point of curve of bank, 400 yards south of road across marsh, and 425 yards south of mouth of a sand-blocked creek. Cement monument marking reference station is 18.67 meters S. $49^{\circ} 25'$ W. of observed station.

Marks.—Observed station is nail in stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cedar Point Light" (N. $6^{\circ} 25'$ W.).....	0	00	00	$8\frac{3}{4}$ miles.
"Hooper Island Light".....	50	53	45	$7\frac{3}{4}$ miles.
"Point No Point Light".....	141	42	30	$4\frac{3}{4}$ miles.
Nail in blaze in pine tree.....	215	51	30	17.72 meters.
REFERENCE STATION.....	235	50	00	18.67 meters.
Nail in blaze in pine tree.....	255	27	00	12.02 meters.
Nail in blaze in pine tree.....	281	58	30	11.74 meters.

POINT NO POINT.

General locality.—Western shore of Chesapeake Bay about one-eighth mile northwest of Point No Point, 2 miles northwest of Point No Point Light, and 2 miles north-northeast of entrance to St. Jerome Creek. (See chart No. 22.)

Immediate locality.—Observed station is partly hidden by pine and cedar trees about 10 feet above high water, 50 yards west of shore, 65 yards southwest of point where fence and shore meet, 35 yards south of a fence, 30 yards south of edge of a graveyard, and 250 yards south by east of a house. Standard cement monument marking new reference station is 5.17 meters S. $77^{\circ} 43'$ W. of observed station. Stone monument marking old reference station is 2.44 meters north of observed station. Stone monument marking old reference station is 1.90 meters east of observed station. Stone monument marking old reference station is 1.29 meters south of observed station.

Marks.—Observed station is a stone cone with top 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument. Three other reference stations are square stone pillars with crosses cut in their tops which are just above surface of ground.

References.—

	°	'	"	
"Point No Point Light" (S. $61^{\circ} 29'$ E.)....	0	00	00	2 miles.
Nail in blaze in tree.....	7	48	30	106 feet.
Nail in blaze in tree (24 inches diameter)...	118	03	00	30.00 meters.
Chimney of house.....	146	17	..	250 yards.
Near peak of roof on house showing through trees.....	184	06	..	$\frac{1}{2}$ mile.
Tangent to fence and graveyard.....	225	00	..	30 yards.
Two nails in blaze in cedar trees (22 inches diameter).....	251	50	00	11.40 meters.
Junction of fence and water.....	279	00	..	65 yards.
NEW REFERENCE STATION (cement monument).....	139	11	30	5.17 meters.
OLD REFERENCE STATION (stone monument) North.....				2.44 meters.
OLD REFERENCE STATION (stone monument) East.....				1.90 meters.
OLD REFERENCE STATION (stone monument) South.....				1.29 meters.

POINT NO POINT LIGHT.

General locality.—Western side of Chesapeake Bay off shore about $1\frac{7}{8}$ miles southeast of Point No Point and $6\frac{3}{4}$ miles north-northeast of Point Lookout. (See chart No. 22.)

Immediate locality.—Observed station is on Point No Point Lighthouse.

Marks.—Observed station is center point of lantern on brick dwelling on a cylindrical foundation known as Point No Point Lighthouse.

References.—
 "Cedar Point Light" (N. $19^{\circ} 35'$ W.)..... 0 00 00 12 miles.

ST. JEROME.

General locality.—Western shore of Chesapeake Bay on St. Jerome Point at north side of entrance to St. Jerome Creek about $2\frac{5}{8}$ miles west-southwest of Point No Point Light. (See chart No. 22.)

Immediate locality.—Observed station is about 3 feet above high water, 6 yards northwest by west of shore, 75 yards south of a large pond, and 120 yards north of a house. Cement monument marking reference station is 19.57 meters N. $44^{\circ} 49'$ W. of observed station.

Marks.—Observed station is nail in stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—
 "Point No Point Light" (N. $78^{\circ} 16'$ E.)..... 0 00 00 $2\frac{5}{8}$ miles.
 Left tangent of woods..... 89 42 $1\frac{1}{8}$ miles.
 Near corner of house..... 142 45 119 yards.
 Near chimney of house..... 165 30 $\frac{1}{2}$ mile.
 Chimney of oyster house..... 173 56 $\frac{1}{2}$ mile.
 "St. Michael Catholic Church Spire"..... 194 12 20 $1\frac{5}{8}$ miles.
 Right chimney of house..... 217 16 $1\frac{1}{2}$ miles.
 REFERENCE STATION..... 236 55 25 19.57 meters.
 Large chimney of house..... 248 03 150 yards.
 Chimney outside of house..... 282 50 $\frac{1}{2}$ mile.
 Right tangent of woods on Point No Point.. 317 21 $1\frac{1}{2}$ miles.

ST. MICHAEL CATHOLIC CHURCH SPIRE.

General locality.—Western shore of Chesapeake Bay about one-half mile west of western and inner shore of St. Jerome Creek. (See chart No. 22.)

Immediate locality.—Observed station is on Catholic Church located on the east side of the main road running to Point Lookout near the village called Ridge or Friendship.

Marks.—Observed station is center point of spire on church.

References.—None necessary.

POINT LOOK-IN.

General locality.—Western shore of Chesapeake Bay on Point Look-in about $1\frac{1}{8}$ miles south-south-east of entrance to St. Jerome Creek and 3 miles southwest of Point No Point Light. (See chart No. 22.)

Immediate locality.—Observed station is on sand dune about 3 feet above high water, 8 yards west of shore, 4 yards east of slough, 56 yards southeast of point of woods, and 90 yards north of another point of woods. Cement monument marking reference station is in woods across slough 44.04 meters N. $51^{\circ} 59'$ W. of observed station.

Marks.—Observed station is nail in stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—
 "Point No Point Light" (N. $47^{\circ} 51'$ E.)..... 0 00 00 3 miles.
 "Holland Island Bar Light"..... 51 24 10 13 miles.
 Left tangent of woods on Point Lookout.... 122 16 $3\frac{3}{8}$ miles.
 Point of woods..... 135 52 90 yards.
 Nail in blaze in oak tree (8 inches diameter).. 250 40 30 36.68 meters.
 REFERENCE STATION..... 260 09 45 44.04 meters.
 Nail in blaze in oak tree (14 inches diameter). 262 25 30 41.08 meters.
 Nail in blaze in cedar tree (5 inches diameter). 271 36 00 46.78 meters.
 Near peak of roof on old barn..... 271 48 $\frac{3}{8}$ mile.
 Point of woods..... 272 26 56 yards.
 Near chimney of small house..... 286 35 $\frac{7}{8}$ mile.
 Two chimneys of old house..... 291 29 $2\frac{1}{8}$ miles.
 Near peak of roof of house on point..... 297 37 $1\frac{1}{2}$ miles.
 Right tangent of woods on Point No Point.. 322 42 $2\frac{3}{4}$ miles.

POTOMAC.

General locality.—Western shore of Chesapeake Bay about three-fourths mile north of extreme end of Point Lookout and one-half mile north-northeast of Point Lookout Light. (See charts Nos. 22 and 23.)

Immediate locality.—Observed station is at upper end of pine woods about 2 feet above high water, 12 yards west by south of shore, 15 yards east-southeast of woods and edge of marsh, and 100 yards north of large pine trees. Cement monument marking reference station is 10.72 meters S. $23^{\circ} 34'$ W. of observed station.

Marks.—Observed station is nail in stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Point No Point Light" (N. $15^{\circ} 30'$ E.).....	0	00	00	$5\frac{7}{8}$ miles.
"Holland Island Bar Light".....	67	11	30	$12\frac{3}{4}$ miles.
"Smith Point Light".....	131	41	30	$13\frac{1}{2}$ miles.
Nail in blaze in pine tree (3 inches diameter).....	160	10	40	6.56 meters.
REFERENCE STATION.....	188	04	10	10.72 meters.
Chimney of house.....	230	58	..	7 miles.
Nail in blaze in pine tree (3 inches diameter).....	260	21	10	10.62 meters.
First tree on Cornfield Point.....	268	48	..	2 miles.
Nail in blaze in pine tree (3 inches diameter).....	323	22	00	6.56 meters.
First tree on Point Look-in.....	334	26	..	$3\frac{1}{2}$ miles.
First tree on Point No Point.....	343	30	..	$6\frac{1}{4}$ miles.
"Hooper Island Light".....	359	04	30	$14\frac{1}{4}$ miles.

POINT LOOKOUT LIGHT.

General locality.—Western side of Chesapeake Bay on Point Lookout at northern side of entrance to Potomac River. (See charts Nos. 22 and 23.)

Immediate locality.—Observed station is on Point Lookout Lighthouse, which is a dwelling on shore near a fog-bell tower.

Marks.—Observed station is center point of a lantern on a dwelling known as Point Lookout Lighthouse.

References.—

	°	'	"	
"Smith Point Light" (S. $34^{\circ} 37'$ E.).....	0	00	00	13 miles.

HALL.

General locality.—Northeastern shore of Potomac River about five-eighths mile northwest of Cornfield Point and $2\frac{3}{4}$ miles northwest of Point Lookout. (See chart No. 22.)

Immediate locality.—Observed station is about 5 feet above high water, 7 yards east of edge of bank, 6 yards south-southeast of a paling fence, and 150 yards south of a large house with two-story porch. Cement monument marking reference station is 17.82 meters N. $45^{\circ} 59'$ E. of observed station. Cemented tile pipe marking another reference station is 23.24 meters N. $47^{\circ} 55'$ E. of observed station.

Marks.—Observed station is nail in 4-inch cemented tile pipe with top flush with surface of ground. One reference station is center point of triangle on standard cement monument. The other reference station is a tile pipe set in cement with top flush with surface of ground.

References.—

	°	'	"	
"Day" (N. $46^{\circ} 23'$ W.).....	0	00	00	$4\frac{1}{2}$ miles.
Near peak of roof of Hall house.....	40	51	30	150 yards.
REFERENCE STATION (cement monument)....	92	22	50	17.82 meters.
REFERENCE STATION (tile).....	94	17	40	23.24 meters.
Chimney of grain house.....	96	24	..	70 yards.

HALL HOUSE (MIDDLE CHIMNEY).

General locality.—Northeastern shore of Potomac River about five-eighths mile northwest of Cornfield Point and $2\frac{3}{4}$ miles northwest of Point Lookout. (See chart No. 22.)

Immediate locality.—Observed station is on a large wooden house about 150 yards inshore from the bank of river.

Marks.—Observed station is middle point of middle chimney on large house belonging to Mr. Hall.

References.—None necessary.

SIG.

General locality.—Northeastern shore of Potomac River on eastern side of Calvert Bay on Gray Point. (See charts Nos. 22 and 24.)

Immediate locality.—Observed station is in edge of a scrub growth about 15 feet above high water, and 3 feet east of edge of bank. Cement monument marking reference station is 12.75 meters N. $58^{\circ} 17'$ E. of observed station.

Marks.—Observed station is nail in northern one of two stumps $2\frac{1}{2}$ inches in diameter. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	''	
"Day" (N. $64^{\circ} 13' W.$)	0	00	00	$1\frac{3}{4}$ miles.
Tall pine tree on Kitts Point	2	18	..	$1\frac{3}{4}$ miles.
Chimney of house on Kitts Point	4	11	..	$1\frac{5}{8}$ miles.
"Red Beacon"	9	07	40	1 mile.
Large chimney of Lewis house	28	06	..	$1\frac{3}{4}$ miles.
Left chimney of Collison house	45	38	..	$\frac{3}{4}$ mile.
Near peak of house	60	29	..	$1\frac{3}{4}$ miles.
Nail in blaze in holly tree (3 inches diameter)	98	16	30	4.57 meters.
REFERENCE STATION	122	29	40	12.75 meters.
Nail in blaze in gum tree (3 inches diameter)	138	28	40	5.16 meters.
Nail in blaze in pine tree (4 inches diameter)	196	52	30	6.75 meters.
Chimney of $1\frac{1}{2}$ -story house	353	44	..	$4\frac{3}{4}$ miles.
Near peak of roof of large house	357	54	..	$4\frac{3}{4}$ miles.

SMITH POINT LIGHT.

General locality.—Western side of Chesapeake Bay on southern side of entrance to Potomac River offshore about 3 miles east of Smith Point. (See chart No. 23.)

Immediate locality.—Observed station is on a square brick tower on an octagonal brick building with a cylindrical foundation.

Marks.—Observed station is center point of lantern on structure known as Smith Point Lighthouse.

References.—

	°	'	''	
"Point Lookout Light" (N. $34^{\circ} 32' W.$)	0	00	00	13 miles.

RED BEACON (1908).

General locality.—Northeastern side of Potomac River offshore in the mouth of Smiths Creek. (See chart No. 24.)

Immediate locality.—Observed station is on a triangular pile structure.

Marks.—Observed station is center point of a small lantern on pile structure known as Smiths Creek Red Beacon.

References.—None necessary.

DAGO.

General locality.—Eastern side of entrance to Smith Creek about one-half mile south-southwest of of Millers Wharf. (See chart No. 24.)

Immediate locality.—Observed station is in a small garden about 6 feet above high water, 40 yards north of an old hotel, 65 yards east of shore, and 165 yards southeast of a lumber wharf. Cement monument marking reference station is on a fence line 29.41 meters N. $78^{\circ} 13'$ W. of observed station.

Marks.—Observed station is tile pipe set in cement with top broken off about 9 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	0'	1'	2'	
"In" (N. $1^{\circ} 39'$ E.).....	0	00	00	5/8 mile.
"Pipe" (taller stack of canning house)....	25	21	30	1/2 mile.
Near corner of house.....	29	26	..	160 yards.
Near corner of barn.....	29	26	..	100 yards.
Northeast corner of old hotel.....	165	22	..	51.97 meters.
Northwest corner of old hotel.....	218	21	..	37.67 meters.
Tree (8 inches diameter).....	261	55	..	42 yards.
REFERENCE STATION.....	280	07	30	29.41 meters.
Chimney of house across creek.....	307	19	..	5/8 mile.

TAB.

General locality.—Western shore of Smith Creek on second prominent point from entrance to creek about three-fourths mile west-southwest of Millers Wharf. (See chart No. 24.)

Immediate locality.—Observed station is about 5 feet above high water, 2 yards north of edge of bank, 5 feet south of edge of bank, 14 yards southwest of a low point, 16 yards north of another low point, 31 yards southeast of still another point, and 58 yards east of a wild-cherry tree. Cement monument marking reference station is 14.53 meters S. $61^{\circ} 14'$ W. of observed station. Reference tile pipe filled with cement is 47.93 meters S. $61^{\circ} 25'$ W. of observed station.

Marks.—Observed station is center of 4-inch tile pipe filled with cement with top flush with surface of ground. One reference station is center point of triangle on standard cement monument. Another reference station is center of cemented tile pipe flush with surface of ground.

References.—

	0'	1'	2'	
"In" (N. $48^{\circ} 08'$ E.).....	0	00	00	5/8 mile.
Near peak of roof of Dunbar house.....	14	00	..	1 1/4 miles.
Gilt ball on center of roof of building.....	16	41	..	2 3/4 miles.
"Pipe" (taller stack of canning house).....	20	20	40	3/4 mile.
Left chimney of house with ell.....	36	27	..	1/2 mile.
Left chimney of house.....	55	07	..	1/2 mile.
Near peak of roof of old hotel.....	69	41	..	1/2 mile.
"Red Beacon".....	105	29	10	5/8 mile.
Right one of two cedar trees.....	150	24	..	55 yards.
REFERENCE STATION (monument).....	193	06	10	14.53 meters.
REFERENCE STATION (tile).....	193	17	00	47.93 meters.
Wild-cherry tree.....	235	22	..	31 yards.
Near peak of large house.....	300	01	..	1/4 mile.

PIER.

General locality.—Eastern shore of Smith Creek at steamboat landing known as Millers Wharf. (See chart No. 24.)

Immediate locality.—Observed station is on snubbing post on north corner of Millers Wharf, 1.46 meters from northeast side of wharf and 0.79 meters from northwest side.

Marks.—Nails mark point where spindle was fastened to snubbing post.

References.—None necessary.

PIPE.

General locality.—Eastern shore of Smith Creek at Millers Wharf. (See chart No. 24.)

Immediate locality.—Observed station is on a building used for packing oysters and tomatoes near wharf at Wynne.

Marks.—Observed station is center of the taller and more southerly of two smoke pipes on canning house at Millers Wharf.

References.—None necessary.

ENOUGH.

General locality.—Southeastern shore of northeastern branch of Smith Creek about one-fourth mile east-northeast of Millers Wharf. (See chart No. 24.)

Immediate locality.—Observed station is on a lightly wooded bank about 12 feet above high water, 5 yards back from edge of bank, 40 yards southwest of a house, and 45 yards northwest of a barn. Cement monument marking reference station is near fence, 19.75 meters N. 19° 51' E. of observed station.

Marks.—Observed station is hole in top of a 3-inch square stub with top about 3 inches above surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"In" (N. 86° 09' W.).....	0	00	00	1/2 mile.
Chimney of house.....	105	20	..	1/2 mile.
REFERENCE STATION.....	106	00	00	19.75 meters.
Near gable of Logan Dunbar house.....	118	17	..	40 yards.
West post of small gate.....	139	45	..	28 yards.
North gable of barn.....	215	04	..	45 yards.
North chimney of Fred Dunbar house.....	234	26	..	1/4 mile.
East chimney of 2-story house.....	252	32	..	1/2 mile.
North gable of store at Wynne.....	329	54	..	1/4 mile.
"Pipe" (taller stack of canning house).....	330	33	..	1/4 mile.

DRUM.

General locality.—Northwestern shore of northeastern branch of Smith Creek about 1/4 mile north-northeast of Millers Wharf. (See chart No. 24.)

Immediate locality.—Observed station is on marsh land on a point opposite Millers Wharf about 21 yards north of shore, 22 yards west of shore, 25 yards northeast of shore, and 35 yards southeast of a cultivated field with several cedar trees along its edge.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"In" (S. 77° 10' W.).....	0	00	00	1/4 mile.
Large chimney of house.....	151	20	..	1/2 mile.
North gable of tobacco barn.....	152	13	..	3/4 mile.
Flagstaff on Dunbar pavilion.....	180	14	..	1/4 mile.
North gable of house.....	195	00	..	1/2 mile.
Left chimney of 2 1/2-story house.....	212	55	..	1/4 mile.
Left chimney of Moore house.....	215	23	..	1/4 mile.
North gable of stable.....	223	36	..	1/4 mile.
Left chimney of 2 1/2-story house.....	235	05	..	3/8 mile.
Chimney of 1 1/2-story house.....	246	10	..	1/2 mile.
Cupola of barn.....	272	21	..	1/4 mile.
"Pipe" (taller stack of canning house).....	299	56	20	3/8 mile.
West gable of old hotel.....	307	31	..	1/4 mile.

IN.

General locality.—Northern shore of Smith Creek on a point between two main branches of creek about one-fourth mile northwest of Millers Wharf. (See chart No. 24.)

Immediate locality.—Observed station is on a grass point which is surrounded by small boulders and cobble stones visible at low water about 2 feet above high water, 2 yards east of side of point, 3 yards northwest of side of point, 10 yards north-northeast of extreme end of point, and near three trees. Cement monument marking reference station is 9.32 meters N. $7^{\circ} 09'$ E. of observed station.

Marks.—Observed station is a 2-inch square stick in center of a 4-inch tile pipe filled with and set in cement with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	2	3	4	5	6	7	8	9	
"Dago" (S. $1^{\circ} 40'$ W.).....	0	00	00	.....							$\frac{5}{8}$ mile.
Right peak of roof of old hotel.....	1	30	..	.....							$\frac{5}{8}$ mile.
Left tangent of point of land.....	28	39	..	.....							$\frac{3}{4}$ mile.
Right chimney of large house.....	64	15	..	.....							$\frac{1}{2}$ mile.
Nail in blaze in cedar tree (7 inches diameter). 160	37	00	.....								2.03 meters.
REFERENCE STATION.....	185	28	45	.....							9.32 meters.
Nail in blaze in cedar tree (14 inches diameter).....	204	13	40	.....							5.33 meters.
Nail in blaze in cedar tree (20 inches diameter).....	213	09	00	.....							11.24 meters.
Cedar tree (24 inches diameter).....	242	18	..	.....							40 yards.
Right peak of Dunbar house.....	255	36	..	.....							$\frac{5}{8}$ mile.
Front peak of large house.....	268	57	..	.....							$\frac{1}{2}$ mile.
"Pipe" (taller stack of canning house).....	300	57	00	.....							$\frac{1}{4}$ mile.
Near peak of roof of house.....	340	21	30	.....							$\frac{3}{8}$ mile.

OAK.

General locality.—Western shore of Smith Creek at entrance to northwestern branch of creek about one-half mile west of Millers Wharf. (See chart No. 24.)

Immediate locality.—Observed station is in a pasture about 6 feet above high water, 15 yards south-southeast of center of a clump of trees, 20 yards south of shore, 28 yards north of shore, and 45 yards west of extreme end of point. Cement monument marking reference station is 14.87 meters N. $53^{\circ} 12'$ W. of observed station.

Marks.—Observed station is a square hole in cement in 4-inch tile pipe set in cement. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	2	3	4	5	6	7	8	9	
"In" (N. $88^{\circ} 51'$ E.).....	0	00	00	.....							$\frac{1}{4}$ mile.
Front peak of house.....	1	04	..	.....							$\frac{3}{4}$ mile.
"Pipe" (taller stack of canning house).....	15	42	30	.....							$\frac{1}{2}$ mile.
Near peak of roof of small 2-story house.....	40	58	..	.....							$\frac{1}{2}$ mile.
Middle chimney of T-shaped house.....	58	33	..	.....							$\frac{5}{8}$ mile.
Near corner of old hotel.....	67	52	..	.....							$\frac{5}{8}$ mile.
"Red Beacon".....	82	15	10	.....							$\frac{1}{2}$ mile.
Near peak of roof of large barn.....	140	38	..	.....							$\frac{1}{4}$ mile.
Large cherry tree.....	172	38	..	.....							157 yards.
REFERENCE STATION.....	217	56	45	.....							14.87 meters.
Nail in blaze in oak stump (20 inches diameter).....	219	57	50	.....							23.14 meters.
Nail in blaze in hickory tree (8 inches diameter).....	222	51	10	.....							14.58 meters.
Nail in blaze in double oak tree (8 inches diameter).....	248	19	00	.....							13.69 meters.

References—Continued.

Nail in blaze in hickory tree (4 inches diameter).....	267	01	00	7.37 meters.
"Flagpole" (on Jutland farmhouse).....	237	06	..	5/8 mile.
Blaze in oak stump (30 inches diameter)....	340	26	..	2.04 meters.

OUT.

General locality.—Eastern shore of northwestern branch of Smith Creek about one-eighth mile north of the main body of Smith Creek. (See chart No. 24.)

Immediate locality.—Observed station is on a sand and marsh point about 1 foot above high water, 6 yards north of shore, 7 yards southeast of shore, 24 yards east of extreme end of point, and 7 yards west of a cultivated field. Cement monument marking reference station is 6.96 meters N. 82° 50' E. of observed station.

Marks.—Observed station is center of a 2-inch pine stub set in cement. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	00	
"Red Beacon" (S. 1° 55' W.).....	0	00	00	1 1/8 miles.
Tangent of Kitts Point.....	20	00	..	3/8 mile.
Left chimney of 2-story house.....	49	34	..	1/2 mile.
East peak of barn.....	53	33	..	1 mile.
Chimney of small house on opposite shore...	141	20	..	1 mile.
Windmill.....	156	17	..	3/8 mile.
Nail in blaze in pine tree.....	203	08	00	8.17 meters.
REFERENCE STATION.....	260	55	15	6.96 meters.
Nail in blaze in holly tree.....	293	38	55	6.27 meters.
Between two chimneys of Morris house.....	345	00	..	1/2 mile.
Chimney of house near old hotel.....	351	11	..	3/4 mile.
West gable of old hotel.....	353	02	..	3/4 mile.

STUNG.

General locality.—Southwestern shore of northwestern branch of Smith Creek about three-fourths mile northwest of Millers Wharf and one-fourth mile northwest of main body of Smith Creek. (See chart No. 24.)

Immediate locality.—Observed station is on solid ground on a point making out just above a small cove about 2 feet above high water, 7 yards south of shore, 9 yards northwest of shore, 15 yards southwest of extreme end of point, and 45 yards from a growth of young pine trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	00	
"Flagpole" (N. 22° 40' E.).....	0	00	00	3/8 mile.
Windmill.....	0	36	..	3/8 mile.
Left chimney of 2 1/2-story house.....	83	31	..	1 mile.
"Pipe" (taller stack of canning house).....	99	05	20	3/4 mile.
Left chimney of house at Wynne.....	102	54	..	3/4 mile.
Left chimney of Morris house.....	122	46	..	3/4 mile.
Left chimney of large house.....	127	01	..	3/8 mile.
Nail in blaze in oak tree (5 inches diameter). 184	40	30	..	6.08 meters.

JUTLAND.

General locality.—Northeastern shore of northwestern branch of Smith Creek about one-half mile north of main body of Smith Creek on a point of land between two coves. (See chart No. 24.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 2 yards north of shore, 4 yards south of shore, 5 yards east of extreme end of point, and 11 yards from bank with large cedar trees on its edge with a peach orchard back of them. Cement monument marking reference station is 10.36 meters N. 86° 27' E. of observed station.

Marks.—Observed station is nail in stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Out" (S. 29° 51' E.)	0	00	00	¼ mile.
Two chimneys of Morris house	10	00	..	¾ mile.
Chimney of house near old hotel	16	12	..	1 mile.
West gable of old hotel	17	17	..	1 mile.
"Red Beacon"	25	01	10	1 ¾ miles.
East gable of barn	56	18	..	¾ mile.
Southeast gable of small house	139	54	..	¾ mile.
Chimney of small house	169	12	..	¾ mile.
Windmill	201	07	..	¾ mile.
"Flagpole" (on Jutland farmhouse)	204	12	55	¾ mile.
REFERENCE STATION	296	18	35	10.36 meters.
Nail in blaze in cedar tree	299	35	00	11.65 meters.

FLAT.

General locality.—Western shore of northwestern branch of Smith Creek about three-fourths mile north-northwest of main body of Smith Creek on a point of land between two coves. (See chart No. 24.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 5 yards south of shore, 7 yards north of shore, 10 yards west of extreme end of point, and 12 yards from a field 5 feet higher than marsh. Cement monument marking reference station is 10.41 meters S. 65° 00' W. of observed station.

Marks.—Observed station is a 2-inch square pine stub with top about 3 inches above surface of marsh. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Jutland" (S. 50° 36' E.)	0	00	00	¼ mile.
"Pipe" (taller stack of canning house)	5	10	..	1 mile.
Between two chimneys on Morris house	22	23	..	1 mile.
Chimney of house near old hotel	29	05	..	1 ¼ miles.
West gable of old hotel	29	44	..	1 ¼ miles.
Blaze in pine tree	107	37	30	14.12 meters.
REFERENCE STATION	115	35	40	10.41 meters.
Chimney of house	140	32	..	¾ mile.
Chimney of small house	200	41	..	¾ mile.
Chimney of house	226	33	..	¾ mile.
"Flagpole" (on Jutland farmhouse)	310	56	40	¾ mile.

FLAGPOLE.

General locality.—Northeastern shore of northwestern branch of Smith Creek, on a house about three-fourths mile north-northwest of main body of Smith Creek. (See chart No. 24.)

Immediate locality.—Observed station is on east gable on the front of a house on Jutland farm.

Marks.—Observed station is flagpole on east gable on the front of residence on Jutland farm.

References.—None necessary.

RAN 2.

General locality.—Eastern shore of northwestern branch of Smith Creek on a point opposite a small cove and about seven-eighths mile north-northwest of main body of Smith Creek. (See chart No. 24.)

Immediate locality.—Observed station is on a narrow sand and marsh point about 1 foot above high water, 3 yards north of shore, 3 yards south of shore, 11 yards east of extreme end of point and in front of a bank 8 or 9 feet high covered with honeysuckle and several large trees. Cement monument marking reference station is about 10 feet above high water 13.74 meters N. 87° 50' E. of observed station.

Marks.—Observed station is hole in stub with top about 6 inches above surface of marsh. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Jutland" (S. 25° 04' E.).....	0	00	00	3½ mile.
Chimney of Morris house.....	3	33	..	1½ miles.
Large chimney of house near old hotel.....	8	29	..	1½ miles.
West peak of old hotel.....	9	13	..	1½ miles.
"Red Beacon".....	12	45	10	1½ miles.
East peak of barn.....	93	05	..	½ mile.
Chimney of small house.....	139	10	..	250 yards.
Small blazed apple tree.....	285	00	..	18.88 meters.
REFERENCE STATION.....	292	54	00	13.74 meters.
"Flagpole" (on Jutland farmhouse).....	333	59	10	½ mile.
Windmill.....	342	24	..	½ mile.

DAY.

General locality.—Northeastern shore of Potomac River about one-fourth mile northwest of Kitts Point between entrances to St. Marys River and Smith Creek. (See chart No. 24.)

Immediate locality.—Observed station is on small island of solid ground on a marsh point about 5 feet above high water, 3 yards east of shore, 20 yards northeast of shore, 18 yards north of extreme end of point, and 150 yards south of a large lone dead tree.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Labor" (N. 89° 37' W.).....	0	00	00	2½ miles.
Near peak of roof of 2½-story house.....	22	23	..	3 miles.
Near peak of roof of brick house.....	48	44	30	3½ miles.
Tall pine on Kitts Point.....	73	48	20	150 yards.
Chimney of old house.....	118	15	..	½ mile.
"Pipe" (taller stack of canning house).....	146	59	00	1½ miles.
Near peak of roof of tobacco house.....	159	51	..	½ mile.
Near peak of roof between two chimneys.....	181	07	20	¼ mile.
Chimney of Hall house.....	222	41	..	4½ miles.

LABOR.

General locality.—Northeastern shore of Potomac River on western side of entrance to St. Marys River on a small island forming the southeastern end of St. George Island. (See chart No. 24.)

Immediate locality.—Observed station is on a marsh grass point about on level with high water, 5 yards north of side of point, 5 yards west of side of point, 8 yards northwest of extreme end of point, 65 yards southwest of another point, 65 yards north-northeast of still another point, and 125 yards southeast of a small pine woods across slough. Cement monument marking reference station is 13.56 meters N. 64° 06' W. of observed station.

Marks. Observed station is nail in stub with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hall" (S. 61° 00' E.).....	0	00	00	6½ miles.
Center of railing around top of Passis house..	117	41	..	4¼ miles.
Canning-house stack.....	119	24	..	3½ miles.
Left tangent of woods on St. George Island..	133	31	..	½ mile.
Inside corner of Poe house on St. George Island.	156	11	..	½ mile.
REFERENCE STATION.....	176	54	00	13.56 meters.
Near peak of roof of Crowder house.....	208	19	..	1 mile.
Center of left tower on Kennedy house.....	261	38	..	4 miles.
Chimney of Taylor house.....	274	58	..	4 miles.
Right chimney of old house.....	331	29	40	2½ miles.

LYNCH POINT 3 (VIRGINIA).

General locality.—Southwestern shore of Potomac River about three-eighths mile northwest of Lynch Point on northwestern side of entrance to Yeocomico River. (See progress map.)

Immediate locality.—Observed station is on sand beach near edge of grass about on level with high water, 50 yards southeast of edge of dense pine woods and a wire fence, 90 yards northwest of another dense pine woods, and northeast of a slough with about a dozen trees on opposite side. One reference tile set in cement is at edge of woods 55.68 meters on a continuation inshore of line from Point Lookout Light. Another reference tile set in cement is in woods 85.53 meters in same direction as the nearer reference station.

Marks.—Observed station is center one of four nails in top of a post 5 inches below surface of ground. Reference stations are tiles set in cement with tops about 2 inches above surface of ground.

References.—

	°	'	"	
"Piney Point Light" (N. 4° 02' W.).....	0	00	00	6 miles.
Steeple on church.....	29	29	..	5¼ miles.
Tall pine tree on Kitts Point.....	58	30	..	6¾ miles.
"St. Michaels Catholic Church Spire".....	63	41	30	9¾ miles.
White tower on building.....	80	54	..	8½ miles.
Tangent of woods.....	142	48	..	3½ miles.
Chimney of house.....	208	48	..	1¾ miles.
REFERENCE STATION (tile).....	278	00	30	55.68 meters.
REFERENCE STATION (tile).....	278	00	30	85.53 meters.
Near peak of roof between two chimneys....	357	13	..	7 miles.

BETWEEN.

General locality.—Eastern shore of St. Marys River about 1¼ miles northwest of Kitts Point at entrance to river. (See chart No. 24.)

Immediate locality.—Observed station is in a pasture about 3 feet above high water, 5 yards northeast of edge of bank, 5 yards southeast of a rail fence, 12 yards southwest of shore of a creek, and 7 to 10 yards west to northwest of persimmon trees. Cement monument marking reference station is at edge of high land 14.42 meters S. 56° 22' E. of observed station.

Marks.—Observed station is nail in stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Day" (S. 27° 01' E.).....	0	00	00	1½ miles.
Chimney of house at edge of woods.....	90	45	..	2½ miles.
Chimney of house beyond middle of woods..	96	16	..	2¼ miles.
Chimney of large house with ell.....	103	50	..	2¾ miles.
Chimney of 2½-story house.....	126	32	..	3½ miles.
"Piney Point Light".....	128	35	30	5½ miles.
Near peak of roof of brick house between two chimneys....	160	32	..	2¼ miles.
Nail in blaze in persimmon tree (4 inches diameter).....	172	47	00	5.87 meters.
"Water Tower" (near Portobello).....	188	38	30	4 miles.
Nail in blaze in persimmon tree (4 inches diameter).....	200	28	20	6.94 meters.
Nail in blaze in persimmon tree (5 inches diameter).....	306	27	10	9.34 meters.
REFERENCE STATION.....	330	30	00	14.42 meters.
Tall pine on Kitts Point.....	358	55	..	1½ miles.

FORT.

General locality.—Eastern shore of St. Marys River on Fort Point about $2\frac{1}{4}$ miles north of entrance to river and seven-eighths of a mile south of Priests Point. (See chart No. 24.)

Immediate locality.—Observed station is in a cultivated field about 15 feet above high water, 16 yards east of edge of bank, 70 yards west by south of a house, and 34 yards south-southwest of a corner of a fence. Cement monument marking reference station is 32.17 meters N. $22^{\circ} 20'$ E. of observed station.

Marks.—Observed station is nail in stub with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Rod" (N. $10^{\circ} 16'$ W.)	0	00	00	$7\frac{1}{8}$ mile.
REFERENCE STATION	32	35	55	32.17 meters.
Near chimney of Taylor house	78	44	..	70 yards.
Chimney of small building	106	38	..	250 yards.
Chimney of $2\frac{1}{2}$ -story house with ell.	246	30	..	$2\frac{3}{8}$ miles.
Canning-house stack	314	03	..	$2\frac{1}{2}$ miles.
Near peak of roof of stable	342	24	..	$2\frac{3}{8}$ miles.
"Water tower" (near Portobello)	351	03	10	$2\frac{3}{4}$ miles.

POND.

General locality.—Western shore of St. Marys River on Pond Point about seven-eighths of a mile north-northeast of Cherryfield Point at entrance to St. George River. (See chart No. 24.)

Immediate locality.—Observed station is on marshland at edge of woods about on level with high water, 6 yards west of edge of marsh, 7 yards south of edge of marsh, 25 yards northeast of edge of marsh, and 20 to 30 yards north and east of pine trees. Cement monument marking reference station is 29.59 meters S. $77^{\circ} 29'$ W. of observed station.

Marks.—Observed station is nail in stub. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Rod" (N. $52^{\circ} 55'$ E.)	0	00	00	$1\frac{1}{4}$ miles.
"St. Inigoes Church Cross"	15	18	00	2 miles.
Chimney of Taylor house	41	46	..	$1\frac{1}{4}$ miles.
Tall pine on Kitts Point	85	08	40	3 miles.
Tangent of Cherryfield Point	138	25	..	$\frac{3}{4}$ mile.
Nail in blaze in pine tree (12 inches diameter)	177	23	50	22.03 meters.
REFERENCE STATION	204	33	30	29.59 meters.
Nail in blaze in pine tree (20 inches diameter)	214	12	00	25.53 meters.
Nail in blaze in pine tree (18 inches diameter)	253	40	30	17.40 meters.
Canning-house stack	276	48	..	$1\frac{1}{2}$ miles.
"Water Tower" (near Portobello)	311	59	40	$2\frac{1}{2}$ miles.
"Calvert Monument"	328	02	20	$3\frac{1}{2}$ miles.
Near peak of house on Bromes Wharf	328	46	..	$3\frac{1}{2}$ miles.
Center of left tower on Kennedy house	344	45	..	$1\frac{7}{8}$ miles.

ROD (PRIESTS HOUSE).

General locality.—Eastern shore of St. Marys River on Priests Point at south side of entrance to St. Inigoes Creek. (See chart No. 24.)

Immediate locality.—Observed station is on a small cupola-shaped centerpiece, or ventilator, on middle of roof of a summer residence of the order of Jesuits, sometimes called Priests Villa.

Marks.—Observed station is a lightning rod on the center ventilator on middle of roof of Priests Villa.

References.—None necessary.

THOMPSON.

General locality.—Western shore of St. Marys River about three-eighths of a mile east-northeast of entrance to Carthagenia Creek, five-eighths of a mile southwest of Windmill Point, and 1 mile north of Pond Point. (See chart No. 24.)

Immediate locality.—Observed station is in a cultivated field about 20 feet above high water, 5 yards southwest of edge of bank, 6 yards northeast of edge of bank, and 7 yards west of extreme edge of bank. Cement monument marking reference station is buried with top about 10 inches below surface of ground 25.00 meters N. $36^{\circ} 53'$ W. of observed station.

Marks.—Observed station is center of a 3-inch square pine box with top flush with surface of ground. Reference station is center point of triangle on standard cement monument with top about 10 inches below surface of ground.

References.—

	°	'	''	
"Pond" (S. $2^{\circ} 06'$ E.)	0	00	00	1 mile.
Nail in large dying pine tree	18	38	00	7.60 meters.
Chimney outside of small house	31	52	..	$\frac{3}{4}$ mile.
Left peak of roof between two chimneys	38	38	..	$\frac{3}{4}$ mile.
REFERENCE STATION	145	13	10	25.00 meters.
Right peak of roof of house	161	05	..	$\frac{1}{4}$ mile.
Right piazza post of Kennedy house	251	57	..	$1\frac{1}{4}$ miles.
Left chimney of Raley house	274	17	..	$1\frac{1}{2}$ miles.
"St. Inigoes Church Cross"	280	17	10	2 miles.
"Rod" (on Priests Villa)	286	52	50	$1\frac{1}{8}$ miles.
Near peak of roof of Taylor house	314	17	..	$1\frac{7}{8}$ miles.

RALEY.

General locality.—Southeastern side of entrance to St. Inigoes Creek about one-half mile northeast of Priests Point and seven-eighths of a mile east-southeast of Windmill Point. (See chart No. 24.)

Immediate locality.—Observed station is in a cultivated field about 15 feet above high water, 40 yards southeast of edge of bank, 40 yards west of edge of ravine, and 135 yards north of a barn.

Marks.—Observed station is center point of triangle on standard cement monument with top about 12 inches below surface of ground. Surface mark is center of a 3-inch square wooden box.

References.—

	°	'	''	
"Rod" (S. $51^{\circ} 03'$ W.)	0	00	00	$\frac{1}{2}$ mile.
Near corner of near chimney of Raley house	8	58	..	150 yards.
Large tree	32	51	..	100 yards.
Chimney of Kennedy house	101	49	..	$\frac{1}{2}$ mile.
Chimney of small house	155	22	..	$\frac{1}{2}$ mile.
Near peak of roof of wharf house	167	16	..	$\frac{5}{8}$ mile.
Chimney of house among trees	177	26	..	$\frac{5}{8}$ mile.
Chimney of small house	211	07	..	$\frac{1}{2}$ mile.
"St. Inigoes Church Cross"	246	43	00	$\frac{3}{8}$ mile.
Right peak of roof of barn	315	14	..	135 yards.
Near peak of cornerib	351	33	..	150 yards.

INIGOES.

General locality.—Northern side of entrance to St. Inigoes Creek about five-eighths of a mile north of Priests Point and five-eighths of a mile east of Windmill Point. (See chart No. 24.)

Immediate locality.—Observed station is offshore in about 4 feet of water, $1\frac{1}{2}$ feet southeast of boat landing, and 45 yards southwest of shore. Cement monument marking reference station is on top of bank about 15 feet high, 50.87 meters N. $39^{\circ} 25'$ E. of observed station.

Marks.—Observed station is a 3-inch square stub driven into bottom in about 4 feet of water and standing plumb with top about 2 feet above high water. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	2	3	4	5	6	7	8	9	
"Rod" (S. $11^{\circ} 53'$ W.)	0	00	00	00	00	00	00	00	00	00	$\frac{5}{8}$ mile.
Left tangent of left chimney of brick house	49	03	..	..	..	..	..	..	..	..	$1\frac{3}{4}$ miles.
Left peak of roof of carriage house	87	04	..	..	..	..	..	..	..	..	$\frac{7}{8}$ mile.
Right chimney of Coppage house	106	26	..	..	..	..	..	..	..	..	$1\frac{3}{8}$ miles.
Chimney of McKay house	139	56	..	..	..	..	..	..	..	..	$1\frac{3}{4}$ miles.
Center of right tower of Kennedy house	168	07	..	..	..	..	..	..	..	..	400 yards.
REFERENCE STATION	207	31	30	..	..	..	..	..	..	..	50.87 meters.
Left chimney of Tyler house	267	42	..	..	..	..	..	..	..	..	$\frac{7}{8}$ mile.
"St. Inigoes Church Cross"	297	30	40	..	..	..	..	..	..	..	1 mile.
Large chimney of Raley house	330	38	..	..	..	..	..	..	..	..	$\frac{3}{8}$ mile.

ST. INIGOES CHURCH CROSS.

General locality.—Eastern side of St. Marys River inshore about 1 mile east from Priests Point and three-fourths of a mile south of Grason Wharf on St. Inigoes Creek. (See chart No. 24.)

Immediate locality.—Observed station is on St. Inigoes Catholic Church.

Marks.—Observed station is center of cross on St. Inigoes Catholic Church.

References.—None necessary.

CHURCH.

General locality.—Southeastern shore of St. Inigoes Creek about five-eighths mile east of St. Marys River and one-fourth mile southwest of Grason Wharf. (See chart No. 24.)

Immediate locality.—Observed station is about 2 feet above high water on a rounded point of land nearly surrounded by water, 13 yards southeast of shore, 14 yards south of shore, 24 yards west-southwest of shore, and 35 yards north of inlet and cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	2	3	4	5	6	7	8	9	
"Grason" (N. $34^{\circ} 44'$ E.)	0	00	00	00	00	00	00	00	00	00	$\frac{1}{4}$ mile.
Near peak of roof of Grason stable	2	52	..	..	..	..	..	..	..	..	$\frac{1}{4}$ mile.
Between two chimneys on near end of Grason house	9	05	..	..	..	..	..	..	..	..	$\frac{1}{4}$ mile.
Nail in blaze in cedar tree (6 inches diameter)	63	26	00	00	00	00	00	00	00	00	12.52 meters.
Nail in blaze in cedar tree (5 inches diameter)	111	22	20	00	00	00	00	00	00	00	9.95 meters.
Nail in blaze in cedar tree (4 inches diameter)	150	08	00	00	00	00	00	00	00	00	7.42 meters.
Near peak of roof between two chimneys on Raley house	280	00	10	00	00	00	00	00	00	00	$\frac{3}{8}$ mile.
Chimney of house	319	57	..	..	..	..	..	..	..	..	$\frac{1}{4}$ mile.
Left chimney on end of house	333	47	..	..	..	..	..	..	..	..	$1\frac{3}{4}$ miles.
Near peak of roof of Grason Wharf house	345	46	..	..	..	..	..	..	..	..	$\frac{1}{4}$ mile.

COTTAGE.

General locality.—Northwestern shore of St. Inigoes Creek about one-half mile east-northeast of St. Marys River and three-eighths mile west-southwest of Grason Wharf. (See chart No. 24.)

Immediate locality.—Observed station is on sand about 1 foot above high water, 2 yards north-northwest of shore, 20 yards south-southeast of woods, and 120 yards southwest by west of extreme end of point. Cement monument marking reference station is 12.82 meters N. $18^{\circ} 52'$ W. of observed station.

Marks.—Observed station is center of 3-inch square wooden box with top flush with surface of sand. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Rod" (S. $37^{\circ} 46'$ W.).....	0	00	00	$\frac{7}{8}$ mile.
REFERENCE STATION.....	123	22	00	12.82 meters.
Nail in blaze in pine tree (24 inches diameter).....	124	36	10	26.03 meters.
Chimney of house.....	174	17	..	$\frac{1}{4}$ mile.
Nail in blaze in double pine tree (5 inches diameter).....	187	08	40	30.90 meters.
"Smoke" (west chimney of tenant house)....	213	55	..	$\frac{1}{2}$ mile.
Between two chimneys of Grason house.....	223	01	..	$\frac{3}{8}$ mile.
Nail in blaze in cedar tree (14 inches diameter).....	223	21	40	17.93 meters.
Left chimney of old house.....	254	07	..	$\frac{1}{2}$ mile.
Left peak of roof of Raley barn.....	342	22	..	$\frac{3}{8}$ mile.
Near peak of roof between two chimneys on Raley house.....	352	58	..	$\frac{1}{2}$ mile.

DUSKY.

General locality.—Northwestern shore of St. Inigoes Creek on a prominent point between creek and a small cove nearly opposite Grason Wharf and about three-fourths mile northeast of St. Marys River. (See chart No. 24.)

Immediate locality.—Observed station is about on level with high water, about 5 yards east of a fence which is on top of a tree-fringed bank 15 feet high. Cement monument marking reference station is near an old creek bed 25.09 meters N. $2^{\circ} 34'$ E. of observed station.

Marks.—Observed station is center of a 3-inch square wooden box. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Smoke" (N. $89^{\circ} 43'$ E.).....	0	00	00	$\frac{3}{8}$ mile.
Near end of Grason Wharf.....	32	53	..	$\frac{1}{8}$ mile.
Right peak of roof of house.....	70	09	..	$\frac{5}{8}$ mile.
Chimney on outside of small house.....	79	09	..	$\frac{5}{8}$ mile.
Left peak of roof of Raley barn.....	115	32	..	$\frac{5}{8}$ mile.
Left corner of Raley house.....	122	40	..	$\frac{5}{8}$ mile.
Right corner of Priest's Villa.....	128	30	..	1 mile.
Cedar tree.....	139	02	..	20 yards.
Corner post of fence.....	220	15	..	4 yards.
Nail in blaze in locust tree (6 inches diameter).....	267	59	10	10.44 meters.
REFERENCE STATION.....	272	51	10	25.09 meters.

GRASON.

General locality.—Southeastern shore of St. Inigoes Creek near Grason Wharf about $\frac{3}{8}$ mile north-east of St. Marys River. (See chart No. 24.)

Immediate locality.—Observed station is about 15 feet above high water, 7 yards southeast of edge of bank, 13 yards northwest of a stable, and near three trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cottage" (S. $72^{\circ} 06'$ W.).....	0	00	00	$\frac{3}{8}$ mile.
Near corner of wharf house.....	26	39	..	130 yards.
Chimney of house.....	39	56	..	$\frac{1}{4}$ mile.
Nail in blaze in elm tree.....	93	43	00	13.37 meters.
Chimney of brick house on hill.....	149	12	..	2 miles.
"Smoke" (west chimney of tenant house)... 179	03	20	..	$\frac{1}{4}$ mile.
Nail in blaze in locust tree (22 inches diam- eter).....	203	09	30	6.40 meters.
Left corner of stable.....	254	37	..	9.19 meters.
Right corner of stable.....	303	28	..	12.05 meters.
Chimney of Raley house.....	333	28	..	$\frac{5}{8}$ mile.
Left tangent of Priest's Villa.....	333	54	..	$1\frac{1}{4}$ miles.
Nail in blaze in cherry tree (18 inches diam- eter).....	352	23	40	12.94 meters.

ROCK.

General locality.—Northwestern shore of St. Inigoes Creek about one-fourth mile north-northwest of Grason Wharf and seven-eighths mile northeast of St. Marys River. (See chart No. 24.)

Immediate locality.—Observed station is on the western side of entrance to a small creek with a wooded shore, about 2 feet above high water, 4 yards north-northwest of shore, and 8 yards east-southeast of a small pool with trees beyond. Cement monument marking reference station is 17.09 meters N. $85^{\circ} 41'$ W. of observed station.

Marks.—Observed station is center of 3-inch square wooden box. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Smoke" (S. $61^{\circ} 13'$ E.).....	0	00	00	$\frac{3}{8}$ mile.
Near peak of roof of barn.....	14	37	..	$\frac{5}{8}$ mile.
Near peak of roof of Grason Wharf house....	57	35	..	$\frac{3}{8}$ mile.
Nail in blaze in pine tree (8 inches diameter). 115	28	00	..	9.95 meters.
Nail in blaze in pine tree (6 inches diameter). 150	23	20	..	17.24 meters.
REFERENCE STATION.....	155	32	05	17.09 meters.
Nail in blaze in pine tree (16 inches diameter). 207	52	20	..	27.45 meters.
Chimney on right end of house.....	250	08	..	$\frac{3}{4}$ mile.
Chimney of house.....	333	42	..	$\frac{1}{2}$ mile.

SMOKE.

General locality.—Southeastern shore of St. Inigoes Creek about one-fourth mile east of Grason Wharf. (See chart No. 24.)

Immediate locality.—Observed station is on a tenant house which is about 15 feet above high water located about one-fourth mile east of Grason Wharf.

Marks.—Observed station is center of brick chimney on west end of house.

References.—None necessary.

CHESTNUT.

General locality.—Southern shore of Upper St. Inigoes Creek about one-half mile east-northeast of Grason Wharf, near the entrance to an eastern branch of creek, and $1\frac{1}{4}$ miles northeast of St. Marys River. (See chart No. 24.)

Immediate locality.—Observed station is in a cultivated field fringed by tall trees about 20 feet above high water, 18 yards south of edge of bank, 70 yards southwest of corner of field, 80 yards west-southwest of edge of bank, 95 yards northeast of trees at hollow, 110 yards southwest of a point, and 150 yards east by north of point where rail fence meets trees.

Marks.—Observed station is center point of triangle on standard cement monument with top about 12 inches below surface of ground. Surface mark is center of 3-inch square wooden box.

References.—

	°	'	"	
"Smoke" (S. $68^{\circ} 53'$ W.).....	0	00	00	$\frac{1}{4}$ mile.
Nail in blaze in pine tree (22 inches diameter)	39	06	50	18.53 meters.
Nail in blaze in cedar tree (18 inches diameter).....	68	45	10	16.46 meters.
Nail in blaze in pine tree (14 inches diameter)	105	03	20	21.10 meters.
Tangent of trees.....	271	00	..	100 yards.
Junction of fences.....	318	47	50	150 yards.

SLEEP.

General locality.—Northern shore of Upper St. Inigoes Creek on a point between two forks of creek about $\frac{1}{2}$ mile northeast of Grason Wharf and $1\frac{1}{4}$ miles northeast of St. Marys River. (See chart No. 24.)

Immediate locality.—Observed station is about 1 foot above high water, 6 yards east of shore, 10 yards north of shore, and on line with persimmon trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Smoke" (S. $11^{\circ} 24'$ W.).....	0	00	00	$\frac{1}{4}$ mile.
Near peak of roof of Grason brick house.....	21	24	20	$\frac{1}{2}$ mile.
Left chimney on higher roof of Raley house .	30	55	..	$1\frac{1}{4}$ miles.
Left peak of roof of wharf house.....	32	37	..	$\frac{3}{8}$ mile.
Tangent of point opposite Grason.....	37	52	..	$\frac{5}{8}$ mile.
Nail in blaze in pine tree (2 inches diameter).	129	34	00	18.25 meters.
Nail in blaze in pine tree (4 inches diameter).	187	28	40	19.89 meters.
Nail in blaze in persimmon tree (9 inches diameter).....	209	56	10	4.45 meters.
Tangent of marsh point.....	244	31	..	150 yards.
Chimney of left ell of house.....	288	26	..	$\frac{5}{8}$ mile.

GRIND.

General locality.—Western side of St. Marys River in water just off Windmill Point and opposite entrance to St. Inigoes Creek. (See chart No. 24.)

Immediate locality.—Observed station is in about 4 feet of water, 45 yards east-southeast of extreme end of point and 120 yards northeast of another point. Cement monument marking reference station is among cedar trees 81.36 meters S. $81^{\circ} 40'$ W. of observed station.

Marks.—Observed station is nail in stub in water. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Rod" (S. $37^{\circ} 47'$ E.).....	0	00	00	$\frac{3}{4}$ mile.
Left peak of roof between two chimneys on brick house.....	87	08	..	$1\frac{1}{2}$ miles.
REFERENCE STATION.....	119	26	50	81.36 meters.
"Water Tower" (near Portobello).....	203	25	20	$1\frac{1}{4}$ miles.
Left corner of left chimney on house at Portobello.....	208	26	..	$1\frac{1}{8}$ miles.

References—Continued.

	°	'	"	
"Calvert Monument"	237	55	10	2½ miles.
Near peak of roof of Bromes Wharf house....	239	10	..	2 miles.
Right piazza post on Kennedy house.....	296	34	..	¾ mile.
"St. Inigoes Church Cross"	331	32	30	1½ miles.
Left peak of roof of Raley house.....	334	49	..	¾ mile.

KENNEDY.

General locality.—Eastern shore of St. Marys River about one-eighth mile north of entrance to St. Inigoes Creek and five-eighths mile east-northeast of Windmill Point. (See chart No. 24.)

Immediate locality.—Observed station is in a garden about 25 feet above high water, 30 yards north-west of edge of bank at wire fence, 65 yards west-southwest of a house, 18 yards south of a fence, and 52 yards south of a paling fence. Cement monument marking reference station is in a garden 20.25 meters N. 37° 05' E. of observed station.

Marks.—Observed station is center of a 3-inch square wooden box. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Rod" (S. 7° 45' W.).....	0	00	00	¾ mile.
Near peak of roof of barn.....	86	25	..	¾ mile.
Near peak of roof of building.....	107	10	..	1½ miles.
Nail in blaze in locust tree (12 inches diam-eter).....	137	45	50	13.21 meters.
REFERENCE STATION.....	209	20	10	20.25 meters.
Near corner of shed.....	209	45	..	57 yards.
Left back piazza post.....	250	21	..	60 yards.
Chimney of cabin.....	280	09	..	120 yards.
Chimney on top of Raley house.....	334	04	..	¾ mile.

COPPAGE.

General locality.—Western shore of St. Marys River about one-fourth mile south of entrance to Cooper Creek, and seven-eighths mile northwest of Windmill Point. (See chart No. 24.)

Immediate locality.—Observed station is near densely wooded land about 25 feet above high water, 5 yards southwest of edge of bank, 6 yards south of edge of bank, 10 yards west of point with cedar tree, and 200 yards west of remains of a pier. Cement monument marking reference station is 11.50 meters S. 83° 21' W. of observed station.

Marks.—Observed station is center of a 3-inch square wooden box with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Bello" (N. 42° 11' E.).....	0	00	00	¾ mile.
Chimney of St. Marys Seminary.....	2	27	..	2 miles.
Near peak of roof of Bromes Wharf house....	3	14	..	1½ miles.
Chimney of Brome house.....	10	42	..	1½ miles.
Chimney of house.....	44	40	..	¾ mile.
Chimney of Kennedy house.....	69	22	..	1¼ miles.
Left chimney of Raley house.....	84	09	..	1½ miles.
Chimney of Priest's villa.....	93	06	..	1½ miles.
Chimney.....	96	45	..	½ mile.
Nail in blaze in pine tree (3 inches diameter). 185	25	20	..	7.68 meters.
Nail in blaze in gum tree (3 inches diameter). 216	30	30	..	10.96 meters.
REFERENCE STATION.....	221	09	50	11.50 meters.
Nail in blaze in gum tree (12 inches diameter). 290	30	30	..	7.32 meters.
"Water Tower" (near Portobello)	344	16	00	¾ mile.

CHAN.

General locality.—Eastern shore of St. Marys River on Chancellor Point about seven-eighths mile north-northwest of entrance to St. Inigoes Creek. (See chart No. 24.)

Immediate locality.—Observed station is on a long point about 3 feet above high water, 10 yards north of side of point, 12 yards south of side of point, 17 yards east of extreme end of point, and near cedar trees. Cement monument marking reference station is 14.14 meters S. $78^{\circ} 09'$ E. of observed station.

Marks.—Observed station is center of a 3-inch square wooden box. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Bello" (N. $37^{\circ} 29'$ W.).....	0	00	00	5 $\frac{1}{8}$ mile.
Chimney of house.....	9	56	..	1 mile.
Left peak of roof between two chimneys....	24	15	..	1 $\frac{1}{8}$ miles.
Left chimney of house on Pagan Point.....	40	35	..	1 $\frac{1}{2}$ miles.
"Calvert Monument".....	56	56	40	1 $\frac{3}{8}$ miles.
"Episcopal Church Cross".....	58	39	40	1 $\frac{3}{8}$ miles.
Near peak of roof of Bromes Wharf house....	58	47	..	1 $\frac{3}{8}$ miles.
Nail in blaze in cedar tree (12 inches diameter).....	123	55	20	4.47 meters.
Nail in blaze in cedar tree (15 inches diameter).....	137	32	20	31.61 meters.
REFERENCE STATION.....	139	19	50	14.14 meters.
Nail in blaze in cedar tree (18 inches diameter).....	157	56	20	13.99 meters.
Weather vane on barn.....	262	54	..	$\frac{3}{4}$ mile.
Silo at Portobello.....	349	29	..	$\frac{3}{4}$ mile.

BELLO.

General locality.—Western shore of St. Marys River on Portobello Point about five-eighths mile north-northwest of Chancellor Point and 1 $\frac{1}{4}$ miles north of Windmill Point. (See chart No. 24.)

Immediate locality.—Observed station is on northeast peak of roof on wharf house at Portobello Landing.

Marks.—Observed station is a flagpole on northeast peak of wharf house.

References.—None necessary.

WATER TOWER (PORTO BELLO).

General locality.—Western side of St. Marys River inshore about one-fourth mile west of Portobello Landing. (See chart No. 24.)

Immediate locality.—Observed station is on a detached structure with a water tank on top.

Marks.—Observed station is center of water tank.

References.—None necessary.

GRAVEL.

General locality.—Eastern shore of St. Marys River about three-eighths mile north-northeast of Chancellor Point, and five-eighths mile east of Portobello Point. (See chart No. 24.)

Immediate locality.—Observed station is on gravel washed up between river and slough about on level with high water, 2 yards north of gravel and marsh line, 33 yards east-northeast of outlet of slough, and 65 yards southwest of point where woods and river meet. Cement monument marking reference station is 26.99 meters N. $86^{\circ} 03'$ E. of observed station.

Marks.—Observed station is nail in stub. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Bello" (N. $77^{\circ} 54'$ W.).....	0	00	00	 $\frac{5}{8}$ mile.
Near peak of roof between two chimneys at Portobello.....	1	58	..	 $\frac{5}{8}$ mile.
House on Pagan Point.....	71	36	..	 $1\frac{1}{8}$ miles.
Near peak of roof of Bromes Wharf house....	95	01	..	 1 mile.
"Episcopal Church Cross".....	95	12	20	 1 mile.
Nail in blaze in pine tree (20 inches diameter).....	141	42	30	 30.95 meters.
Nail in blaze in pine tree (18 inches diameter).....	162	19	00	 22.75 meters.
REFERENCE STATION.....	163	56	40	 26.99 meters.
Nail in blaze in pine tree (20 inches diameter).....	189	00	40	 21.11 meters.
Weather vane on barn.....	298	12	..	 $1\frac{1}{8}$ miles
Between two chimneys on house near Portobello.....	358	20	..	 $\frac{3}{4}$ mile

McKAY.

General locality.—Western shore of St. Marys River about one-half mile north-northeast of Portobello Point, and five-eighths mile west-southwest of Bromes Wharf. (See chart No. 24.)

Immediate locality.—Observed station is about on level with high water, 14 yards south of a fence extending into water, and at edge of woods. Cement monument marking reference station is 8.12 meters S. $71^{\circ} 35'$ W. of observed station.

Marks.—Observed station is center of a 3-inch square wooden box. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Bello" (S. $23^{\circ} 16'$ W.).....	0	00	00	 $\frac{1}{2}$ mile.
Nail in blaze in locust tree (3 inches diameter).....	26	41	40	 6.82 meters.
REFERENCE STATION.....	48	18	55	 8.12 meters.
Nail in blaze in gum tree (8 inches diameter).....	119	55	00	 3.48 meters.
Nail in blaze in willow tree (8 inches diameter).....	158	35	20	 8.25 meters.
"Calvert Monument".....	215	58	30	 $\frac{3}{4}$ mile.
"Episcopal Church Cross".....	217	55	10	 $\frac{3}{4}$ mile.
Near peak of roof on Bromes Wharf house....	222	48	..	 $\frac{5}{8}$ mile.
Weather vane on barn.....	350	55	40	 $1\frac{1}{2}$ miles.

BROME.

General locality.—Eastern shore of St. Marys River about three-eighths mile south of Bromes Wharf at St. Marys. (See chart No. 24.)

Immediate locality.—Observed station is in edge of woods about 6 feet above high water, 2 yards southeast of shore, and 25 yards from foot of a slope. Cement monument marking reference station is in woods 5.65 meters S. $76^{\circ} 12'$ E. of observed station.

Marks.—Observed station is center of a 3-inch square wooden box with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"McKay" (N. $86^{\circ} 29'$ W.).....	0	00	00	¾ mile.
Peak of roof between two chimneys of McKay house.....	4	08	..	¾ mile.
Peak of barn.....	46	30	..	¾ mile.
Right chimney of two-story house.....	47	54	..	¾ mile.
Chimney of small house.....	60	26	..	½ mile.
Stovepipe of small cabin.....	63	27	..	½ mile.
Peak of roof of Bromes Wharf house.....	75	30	..	¾ mile.
"Episcopal Church Cross".....	81	46	..	¾ mile.
Nail in blaze in chestnut tree.....	157	16	10	4.32 meters.
REFERENCE STATION.....	190	17	20	5.65 meters.
Nail in blaze in cherry tree.....	207	43	30	6.40 meters.
Tangent of Gravelly Point.....	298	00	..	¾ mile.
Peak of roof between two chimneys of house at Portobello.....	333	45	..	1 mile.

DEEP.

General locality.—Western shore of St. Marys River opposite Bromes Wharf on first prominent point south of Pagan Point. (See chart No. 24.)

Immediate locality.—Observed station is about 1 foot above high water, 11 yards southwest of side of point, 12 yards north-northwest of side of point, 17 yards west of extreme end of point, and near several small piles of oyster shells.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Pagan" (N. $0^{\circ} 42'$ W.).....	0	00	00	¾ mile.
Peak of barn.....	3	05	..	¾ mile.
Chimney of two-story house.....	8	35	..	¾ mile.
Outside chimney of house.....	55	06	..	½ mile.
Smoke pipe of cabin near monument.....	68	12	..	½ mile.
Windmill at St. Marys Seminary.....	72	00	..	½ mile.
"Calvert Monument".....	72	10	15	½ mile.
"Episcopal Church Cross".....	74	12	00	½ mile.
Peak of roof of Bromes Wharf house.....	83	25	..	¾ mile.
Chimney of small house.....	103	57	..	½ mile.
Nail in blaze in cedar tree.....	149	58	35	9.01 meters.
Tangent of Chancellor Point.....	183	00	..	1½ miles.
Peak of roof between two chimneys.....	216	08	..	¾ mile.
Nail in blaze in cedar tree.....	303	47	20	21.87 meters.

CALVERT MONUMENT.

General locality.—Eastern shore of St. Marys River on high prominent point near site of Old St. Marys. (See chart No. 24.)

Immediate locality.—Observed station is a tall granite shaft erected in memory of Calvert who founded the first settlement of Maryland near this point.

Marks.—Observed station is apex of pyramidal top of shaft of Calvert Monument.

References.—None necessary.

EPISCOPAL CHURCH CROSS (OLD ST. MARYS).

General locality.—Eastern shore of St. Marys River near site of Old St. Marys. (See chart No. 24.)

Immediate locality.—Observed station is on tower of the Episcopal Church at Old St. Marys.

Marks.—Observed station is center of cross on tower of the Episcopal Church.

References.—None necessary.

PAGAN.

General locality.—Western side of upper St. Marys River on Pagan Point opposite site of Old St. Marys. (See chart No. 24.)

Immediate locality.—Observed station is about 30 feet above high water, 120 yards southeast of river, 130 yards southwest of river, 26 yards southwest of a corn crib, 6 yards north of a wire fence, 16 yards south of another wire fence, and 10 yards west of still another wire fence.

Marks.—Observed station is center point of triangle on standard cement monument with top about 10 inches below surface of ground. Surface mark is nail in stub.

References.—

	o	'	"	
"Calvert Monument" (S. 67° 16' E.).....	0	00	00	1/2 mile.
Near peak of roof of wharf house.....	8	12	..	1/2 mile.
Near peak of roof of Brome house.....	12	03	..	3/4 mile.
Left side of left chimney of McKay house....	96	31	..	3/4 mile.
Left chimney of large house on hill.....	191	19	..	1 1/2 miles.
Near corner of corn crib.....	290	21	10	23.11 meters.
Left corner of stable.....	333	33	10	27.85 meters.
Near corner of stable.....	348	27	40	24.95 meters.
"Episcopal Church Cross".....	358	26	50	1/2 mile.

BEND.

General locality.—Eastern shore of Horseshoe Bend in the upper St. Marys River about five-eighths mile north-northeast of Calvert Monument and 1 mile east of Horseshoe Point. (See chart No. 24.)

Immediate locality.—Observed station is in a clear space about 15 feet above high water, 16 yards east of shore, 6 yards east of edge of bank, 7 yards east of a road, 12 yards south of trees, 12 yards west of bushes, 16 yards north of trees, and 23 yards northwest of trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Calvert Monument" (S. 31° 22' W.).....	0	00	00	5/8 mile.
Near corner of near chimney of McKay house	19	16	..	1 5/8 miles.
Chimney on middle of house on Pagan Point.	30	50	..	7/8 mile.
End of front peak of Brisco house.....	55	22	..	1 1/2 miles.
Near chimney of large house.....	70	03	..	1 3/4 miles.
Nail in blaze in pine tree (3 inches diameter).	131	21	20	10.53 meters.
Nail in blaze in gum tree (9 inches diameter).	178	39	10	18.70 meters.
Nail in blaze in double cedar tree (3 inches diameter).....	228	54	30	22.24 meters.
Windmill at St. Marys Seminary.....	351	48	30	5/8 mile.
Near peak of roof of Commencement Hall at St. Marys.....	354	57	..	5/8 mile.
"Episcopal Church Cross".....	356	22	00	5/8 mile.

WEST HOLLOW.

General locality.—Western shore of upper St. Marys River opposite Horseshoe Point and between Pagan Point and Short Point. (See chart No. 24.)

Immediate locality.—Observed station is in a pasture about 15 feet above high water, 16 yards southwest of edge of bank at shore, 45 yards west by south of extreme end of point, 40 yards northwest of trees in ravine, and 115 yards southeast of trees along edge of field and bank of creek.

Marks.—Observed station is center point of triangle on standard cement monument with top about 1 inch above surface of ground.

References.—

	°	'	"	
"Brief" (N. 10° 30' E.).....	0	00	00	½ mile.
Right chimney of house on hill.....	1	48	..	1½ miles.
Nail in blaze in oak tree (4 inches diameter).....	8	42	20	18.37 meters.
Windmill.....	24	49	..	1 mile.
Chimney of house.....	26	01	..	1 mile.
Near corner of chimney of Freeman house....	36	07	..	1 mile.
Windmill at St. Marys Seminary.....	93	50	..	1¼ miles.
Near corner of chimney of small house.....	112	30	..	200 yards.
Tile smoke pipe of small house.....	171	20	..	¼ mile.
Nail in blaze in pine tree (6 inches diameter).....	281	38	00	94.40 meters.
Nail in blaze in oak tree (6 inches diameter).....	324	17	20	32.86 meters.

HORSESHOE.

General locality.—Eastern side of upper St. Marys River about three-eighths mile north-northeast of Horseshoe Point, opposite Short Point, and 1⅛ miles north-northwest of Calvert Monument. (See chart No. 24.)

Immediate locality.—Observed station is in a cultivated field about 25 feet above high water, 175 yards east of shore, 120 yards east of edge of bank, 60 yards northwest of a rail fence and a line of trees, and 165 yards northeast of corner of fence and bank.

Marks.—Observed station is center point of triangle on standard cement monument with top about 12 inches below surface of ground. Surface mark is center of 3-inch square wooden box.

References.—

	°	'	"	
"Calvert Monument" (S. 28° 20' E.).....	0	00	00	1⅛ miles.
Nail in blaze in oak tree (14 inches diameter).....	34	20	50	64.12 meters.
Chimney of McCoy house on Lynch Island ..	149	44	30	1½ miles.
Center front peak of Hilton house.....	166	43	..	1½ miles.
Near end of gable.....	239	31	..	¼ mile.
Near corner of near chimney of Freeman house.....	275	02	..	¼ mile.
Nail in blaze in cedar tree (5 inches diameter).....	306	29	20	72.41 meters.
Nail in blaze in cedar tree (4 inches diameter).....	354	39	00	51.71 meters.
Right corner of near square pillar at St. Marys Seminary.....	356	20	..	1⅛ miles.
"Episcopal Church Cross".....	358	08	40	1⅛ miles.

BRIEF.

General locality.—Western shore of upper St. Marys River on Short Point about three-eighths mile northwest of Horseshoe Point and one-half mile south of Martin Point. (See chart No. 24.)

Immediate locality.—Observed station is about 10 feet above high water, 17 yards south-southwest of shore, 30 yards south of edge of bank, 45 yards northwest of shore, and 110 yards west of extreme end of point with four cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument with top about 12 inches below surface of ground. Surface mark is center of a 3-inch square wooden box.

References.—

	°	'	"	
"Pagan" (S. 37° 41' E.).....	0	00	00	 7/8 mile.
Left corner of near chimney of McKay house.	25	14	..	 1 1/8 mile.
Nail in blaze in oak tree (7 inches diameter).	30	35	10	 29.86 meters.
Near corner of near chimney of Hyatt house.	130	11	..	 1/4 mile.
Middle gable of Hilton house.....	189	01	..	 1 1/4 miles.
Left peak of roof of Hammett house.....	207	39	..	 1 1/4 miles.
Right peak of roof of Sanders house.....	230	54	..	 1 1/2 miles.
Nail in blaze in oak tree (6 inches diameter).	238	40	10	 15.37 meters.
Left corner of chimney outside of Cox house.	248	42	..	 1 1/2 miles.
Near peak of roof between two outside chim-				
neys.....	288	44	..	 1 mile.
Nail in blaze in oak tree (5 inches diameter).	314	15	50	 37.68 meters.
Windmill at St. Marys Seminary.....	345	07	..	 1 1/4 miles.
Chimney on near end of house on Pagan Point.	358	17	..	 7/8 mile.

TENUATE.

General locality.—Western shore of upper St. Marys River on Long Point about one-fourth mile northwest of Short Point, three-eighths mile south-southwest of Martin Point, and five-eighths mile northwest of Horseshoe Point. (See chart No. 24.)

Immediate locality.—Observed station is on a point with two cedar trees about 20 feet above high water, 7 yards southeast of edge of bank, 10 yards west-southwest of edge of bank, 13 yards south-southwest of extreme point of bank, and 30 yards northeast of a small negro house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Calvert Monument" (S. 47° 35' E.).....	0	00	00	 1 1/2 miles.
Outside chimney of Hyatt house.....	26	27	..	 1/4 mile.
Nail in blaze in cedar tree (10 inches diam-				
eter).....	68	04	00	 13.24 meters.
Left corner of negro house.....	84	17	..	 27.06 meters.
Chimney of negro house.....	100	58	..	 30 yards.
Right corner of negro house.....	108	12	20	 26.15 meters.
Chimney of McCoy house.....	184	49	..	 7/8 mile.
Peak of middle gable of Hilton house.....	202	03	..	 1 mile.
Left chimney of Hammett house.....	225	37	..	 1 mile.
Right chimney of Sanders house.....	254	27	..	 1 mile.
Windmill.....	296	09	30	 1 mile.
Left chimney outside of Freeman house....	314	07	..	 1 mile.
Windmill at St. Marys Seminary.....	356	09	..	 1 3/8 miles.

MARTIN.

General locality.—Eastern shore of upper St. Marys River on Martin Point opposite Long Point about one-half mile north of Short Point, and seven-eighths mile north-northwest of Horseshoe Point. (See chart No. 24.)

Immediate locality.—Observed station is on a point of land about 3 feet above high water, 4 yards east of shore, 7 yards northwest of shore, 12 yards north of extreme end of point, and 30 yards north of cedar trees standing in water.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Calvert Monument" (S. 35° 21' E.).....	0	00	00	1¾ miles.
Nail in blaze in double cedar tree (14 inches diameter).....	41	45	10	9.56 meters.
Left chimney of Coombs house.....	81	52	..	1 mile.
Chimney of McCoy house on Lynch Island. 149	01	..	..	¾ mile.
Nail in blaze in cedar tree (9 inches diameter).....	198	33	10	26.99 meters.
Near side peak of roof on Sanders house....	244	06	..	½ mile.
Chimney of house.....	275	55	..	¾ mile.
Nail in blaze in cedar tree (4 inches diameter).....	306	14	50	3.40 meters.
"Episcopal Church Cross".....	358	54	00	1¾ miles.

SOAK.

General locality.—Western shore of upper St. Marys River about one-half mile southeast of Lynch Island and one-half mile west-northwest of Long Point. (See chart No. 24.)

Immediate locality.—Observed station is about 1 foot below high water, 3 yards northeast of bank back of which is a dense growth of pine trees, and 10 yards west of the first point northwest of Long Point. Cement monument marking reference station is 11.02 meters S. 32° 36' W. of observed station.

Marks.—Observed station is nail in stub with top about 6 inches above bottom of river. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Martin" (N. 78° 17' E.).....	0	00	00	¾ mile.
Berrill windmill.....	7	34	..	1¼ miles.
Near peak of roof of Berrill house.....	10	23	..	1¼ miles.
Chimney of house on Long Point.....	44	52	..	½ mile.
Nail in blaze in pine tree (8 inches diameter). 92	50	40	..	16.86 meters.
Nail in blaze in oak tree (20 inches diameter). 132	41	00	..	12.66 meters.
REFERENCE STATION.....	134	19	00	11.02 meters.
Nail in blaze in oak tree (15 inches diameter). 187	25	10	..	17.74 meters.
Outside chimney of Ware house.....	235	18	..	1½ miles.
Chimney of McCoy house on Lynch Island.. 252	53	..	..	½ mile.
Near end of middle gable of Hilton house....	269	00	..	¾ mile.
Peak of roof between two outside chimneys.. 302	03	..	..	¾ mile.
Right chimney of Hammett house.....	302	51	..	¾ mile.
Near peak of side gable of Sanders house....	334	13	..	1½ miles.

HAMMETT.

General locality.—Eastern shore of upper St. Marys River on a prominent point about three-eighths of a mile east of Lynch Island and five-eighths of a mile northwest of Martin Point. (See chart No. 24.)

Immediate locality.—Observed station is on edge of cultivated land about 4 feet above high water, 8 yards north of shore, 30 yards east of shore on left line of slough, 7 yards east of a single cedar tree, and 90 yards southeast of trees on other side of point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Calvert Monument" (S. $41^{\circ} 32'$ E.).....	0	00	00	2¼ miles.
Chimney on near end of Garrett house.....	5	21	..	1¾ miles.
Chimney outside of Hyatt house.....	14	31	..	1 mile.
Nail in blaze in cedar tree (3 inches diameter).....	99	38	40	6.21 meters.
Chimney outside of McCoy house.....	143	30	..	¾ mile.
Left chimney of Hammett house.....	252	15	..	¾ mile.
Right peak of roof between two chimneys of Sanders house	250	50	..	1 mile.
Windmill near Berrill.....	326	23	..	1½ miles.
Left chimney of Berrill house.....	329	08	..	1½ miles.
Nail in blaze in small persimmon tree.....	335	20	00	8.39 meters.
Near peak of roof between two chimneys of Freeman house	336	37	..	1½ miles.
Windmill at St. Marys Seminary.....	357	14	50	2¼ miles.
"Episcopal Church Cross"	359	14	50	2¼ miles.

MCCOY.

General locality.—Upper St. Marys River on southwestern end of Lynch Island, about seven-eighths of a mile west-northwest of Martin Point. (See chart No. 24.)

Immediate locality.—Observed station is about 10 feet above high water, 10 yards east of shore, 30 yards northwest of shore, 45 yards north of shore at extreme point of island, and 120 yards southwest by south of McCoy camp house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Calvert Monument" (S. $47^{\circ} 18'$ E.).....	0	00	00	2¼ miles.
Chimney of house on Long Point.....	1	31	..	1 mile.
Left chimney of house on Short Point.....	4	35	..	1¼ miles.
Nail in blaze in walnut tree (7 inches diameter).....	26	49	30	5.73 meters.
Left chimney of Powell house.....	90	38	..	¾ mile.
Nail in blaze in walnut tree (12 inches diameter).....	95	17	20	15.46 meters.
Nail in blaze in walnut tree (7 inches diameter).....	182	08	00	8.41 meters.
Nail in blaze in walnut tree (6 inches diameter).....	217	16	40	10.34 meters.
Right corner of McCoy house.....	283	14	30	120 yards.
Near peak of roof between two chimneys of Freeman house	338	02	..	1¾ miles.
Windmill at St. Marys Seminary.....	357	35	20	2½ miles.
"Episcopal Church Cross"	359	23	30	2½ miles.

SMACK.

General locality.—Southern side of entrance to St. George River on St. George Island opposite Cherryfield Point. (See chart No. 24.)

Immediate locality.—Observed station is about 3 feet above high water, 8 yards south of shore, 30 yards southwest of extreme end of point, 45 yards west of shore, and 4 yards northeast of fence and orchard. Cement monument marking reference station is 6.20 meters S. $13^{\circ} 27'$ E. of observed station.

Marks.—Observed station is nail in stub with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cherry" (N. $31^{\circ} 53'$ E.).....	0	00	00	$\frac{1}{2}$ mile.
Chimney of Taylor house.....	27	55	..	$2\frac{3}{8}$ miles.
"St. Michaels Catholic Church Spire".....	58	01	50	$5\frac{3}{4}$ miles.
Near peak of roof of Lewis Hotel at Smith Creek.....	72	05	30	$3\frac{3}{4}$ miles.
Near peak of roof of long barn on Kitts Point..	77	54	..	$2\frac{3}{8}$ miles.
Chimney of first house on point of island....	112	34	..	$\frac{1}{4}$ mile.
REFERENCE STATION.....	134	39	40	6.20 meters.
Chimney of house.....	137	32	..	$\frac{1}{8}$ mile.
Chimney of house.....	170	38	..	120 yards.
Nail in blaze in peach tree (3 inches diame- ter).....	177	43	50	4.76 meters.
Nail in blaze in peach tree (4 inches diame- ter).....	215	55	10	6.42 meters.
Ball on church.....	231	25	..	$\frac{1}{2}$ mile.
Chimney of house.....	254	02	..	$\frac{3}{4}$ mile.
Near peak of roof.....	299	25	..	$1\frac{3}{8}$ miles.
Chimney of house.....	328	03	..	2 miles.

CHERRY.

General locality.—Northern side of entrance to St. George River on Cherryfield Point. (See chart No. 24.)

Immediate locality.—Observed station is about 2 feet above high water, 27 yards east of shore, 30 yards north of shore, 30 yards southwest of pine woods, and near several trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Smack" (S. $31^{\circ} 53'$ W.).....	0	00	00	$\frac{1}{2}$ mile.
Cross on Catholic Church.....	14	52	40	$\frac{3}{4}$ mile.
Chimney of $2\frac{1}{2}$ -story house.....	42	11	..	1 mile.
Left piazza post of Dana Hall.....	56	38	..	$1\frac{1}{4}$ miles.
Near peak of roof of barn.....	104	33	..	$\frac{3}{8}$ mile.
Nail in blaze in pine tree (14 inches diame- ter).....	170	15	30	21.96 meters.
Nail in blaze in pine tree (14 inches diame- ter).....	207	32	50	6.30 meters.
Nail in blaze in pine tree (8 inches diameter)...	226	59	40	17.40 meters.
Chimney of house with ell.....	350	16	..	$\frac{3}{8}$ mile.
Near chimney of house on opposite point....	359	27	..	$\frac{1}{2}$ mile.

PRICE.

General locality.—Northern shore of St. George River on eastern side of entrance to Price Creek and about one-half mile north of Cherryfield Point. (See chart No. 24.)

Immediate locality.—Observed station is on a marsh point about $1\frac{1}{2}$ feet above high water, 9 yards southeast of shore, 17 yards north-northeast of shore, 21 yards east-northeast of shore at end of point, and 200 yards west of pine woods on inner edge of marsh.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Smack" (S. $18^{\circ} 06'$ W.).....	0	00	00	1 mile.
Chimney on middle of house.....	32	19	..	$1\frac{1}{4}$ miles.
Right chimney of large house.....	44	10	..	$1\frac{3}{8}$ miles.
Chimney on Adams store.....	46	27	..	$1\frac{3}{8}$ miles.
Near peak of house with no chimney.....	48	01	..	$1\frac{3}{8}$ miles.
Cupola of dance hall.....	51	15	..	$1\frac{3}{8}$ miles.
Chimney of small house.....	53	30	..	$1\frac{1}{2}$ miles.
Chimney of small house.....	54	00	..	$1\frac{1}{2}$ miles.
Largest chimney on Milton house.....	86	04	..	$\frac{3}{4}$ mile.
Peak of Milton barn.....	92	27	..	$\frac{3}{4}$ mile.
Chimney of small cabin.....	105	24	..	$\frac{5}{8}$ mile.
Peak of Thompson house.....	122	05	..	$\frac{3}{4}$ mile.

ADAMS.

General locality.—Southwestern shore of St. George River on St. George Island about 1 mile west-southwest of Cherryfield Point. (See chart No. 24.)

Immediate locality.—Observed station is in chicken yard about 1 foot above high-water mark, 28 yards southwest of shore, 15 yards southwest of wire fence, 17 yards south of corner of wire fence, 38 yards west-northwest of corner of wire fence, 37 yards north of corner of wire fence, and 30 yards east of corner of wire fence. Cement monument marking reference station is 13.63 meters N. $80^{\circ} 35'$ W. of observed station.

Marks.—Observed station is nail in tree stump 8 inches in diameter. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cherry" (N. $81^{\circ} 14'$ E.).....	0	00	00	1 mile.
Corner post of wire fence.....	33	42	..	38 yards.
Near peak of roof of large house.....	64	03	..	$\frac{1}{4}$ mile.
Left chimney of large house with four gables.	88	46	..	$\frac{1}{8}$ mile.
Nail in blaze in pine tree (10 inches diameter).....	91	03	20	11.35 meters.
Corner tree of wire fence.....	98	43	..	37 yards.
Near edge of peak of gable.....	154	28	..	100 yards.
Nail in blaze in pine tree (10 inches diameter).....	155	34	20	21.29 meters.
Corner tree of wire fence.....	173	20	..	30 yards.
Near corner of chicken house.....	189	49	..	12.62 meters.
Nail in blaze in pine tree (10 inches diameter).....	192	15	10	8.89 meters.
REFERENCE STATION.....	198	11	30	13.65 meters.
Right chimney of house.....	207	29	..	$\frac{1}{8}$ mile.
Pole on pavilion on wharf.....	228	02	..	$\frac{1}{4}$ mile.
Corner post of wire fence.....	283	24	..	17 yards.
Near peak of roof between chimneys.....	312	22	..	$1\frac{3}{4}$ miles.

GOOSE.

General locality.—Northeastern shore of St. George River, about three-fourths mile northwest of Cherryfield Point, and one-fourth mile northwest of entrance to Price Creek. (See chart No. 24.)

Immediate locality.—Observed station is about 1 foot above high-water mark, among cedar, pine, and persimmon trees, 4 yards northeast of edge of lane, 13 yards south of cultivated land beyond trees, and a few yards northwest of four large pine trees at edge of water.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Cherry" (S. 45° 49' E.).....	0	00	00	¾ mile.
Nail in blaze in pine tree (11 inches diameter).....	7	36	50	8.08 meters.
Chimney on middle of two and a half story house.....	69	58	..	¾ mile.
Near front peak of two and a half story house..	74	00	..	¾ mile.
Chimney of storehouse.....	94	28	..	¾ mile.
Smokepipe of cottage near high scant woods..	118	53	..	1 mile.
High lone pine tree on St. George Island....	134	07	..	1½ miles.
Chimney on two and a half story house near Piney Point.....	145	57	..	2¾ miles.
Nail in blaze in cedar tree (5 inches diameter).....	174	06	20	8.74 meters.
Nail in blaze in cedar tree (8 inches diameter).....	207	13	00	2.58 meters.
Nail in blaze in cedar tree (6 inches diameter).....	290	25	50	5.75 meters.
Right peak of wharf house.....	263	01	..	1 mile.
Tangent of point.....	347	47	..	250 yards.

STRAITS.

General locality.—Southwestern shore of St. George River on St. George Island about one-fourth of a mile southeast of St. George Island Straits, and about 1¼ miles east of Piney Point Light. (See chart No. 24.)

Immediate locality.—Observed station is on marsh land at about 1 foot above high-water mark, 3 yards southeast side of point, 5 yards northwest of side of point, and 19 yards southwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Piney Point Light" (N. 88° 05' W.).....	0	00	00	1¾ miles.
Left peak of roof of small house.....	11	48	..	125 yards.
Near peak of roof of hotel (lightning rod)....	42	28	..	½ mile.
Main chimney of house.....	52	00	..	¾ mile.
Lone locust tree.....	96	33	..	¾ mile.
Chimney of large house with four gables....	239	42	..	½ mile.
Chimney of house.....	273	47	..	125 yards.

COMBS.

General locality.—Northeastern side of St. George River on a small island about one-eighth mile off shore and one-half mile east of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is on marsh land about on level with high water, 7 yards north of extreme end of point, 11 yards west of shore, and 40 yards east-southeast of another point. Cement monument marking reference station is 13.87 meters N. 1° 12' W. of observed station.

Marks.—Observed station is nail in stake. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Piney Point Light" (S. 84° 52' W.)	0	00	00	2½ miles.
Chimney on right end of Swan Hotel	15	01		⅝ mile.
Right peak of Graves Hotel	21	30		¾ mile.
Left chimney of Robrecht house	33	08		⅞ mile.
Left cedar on Moore Island	39	56		⅞ mile.
Cedar tree	51	41		⅞ mile.
Chimney of Taylor house	56	14		¼ mile.
REFERENCE STATION	93	55	30	13.87 meters.
Lightning rod about on line with chimney	157	56		¼ mile.
Pavilion on wharf	271	03		⅝ mile.

SWAN.

General locality.—Southwestern shore of St. George River about one-eighth of a mile north of St. George Island Straits and 1½ miles east of Piney Point Light. (See chart No. 24.)

Immediate locality.—Observed station is in a pasture near a locust tree and three small pine trees about 3 feet above high-water mark, 12 yards south-southeast of shore, 14 yards west of shore, 4 yards west of edge of bank, 10 yards south-southeast of edge of bank, 12 yards south of extreme point of bank, 30 yards southwest of extreme end of point, and 130 yards northeast of a cross on a grave.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Piney Point Light" (S. 82° 14' W.)	0	00	00	1½ miles.
Small chimney of house	43	04		200 yards.
Main chimney of house	67	22		½ mile.
Near chimney of large house	102	20		1¾ miles.
Near one of two outside chimneys of house	113	12		1 mile.
Nail in blaze in pine tree (2½ inches diameter)	125	54	50	9.77 meters.
Right chimney of house	181	19		¾ mile.
Nail in blaze in pine tree (2 inches diameter)	218	41	30	5.73 meters.
Pavilion on wharf	237	02		¾ mile.
Chimney of house in woods	255	26		⅞ mile.
Nail in blaze in locust tree (20 inches diameter)	288	29	10	3.77 meters.
Cross on grave	317	29	30	132 yards.

TAYLOR.

General locality.—Northeastern shore of St. George River about one-half mile northeast of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is on solid land back of marsh about 4 feet above high water, 37 yards southeast of shore, 10 yards south-southeast of fence corner, 100 yards east-northeast of a clump of trees, and 125 yards northwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Straits" (S. 8° 58' W.)	0	00	00	½ mile.
Chimney of Swan Hotel	66	01	20	½ mile.
Right chimney of Graves Hotel	79	58		⅝ mile.
Main chimney of Robrecht house	99	11		½ mile.
Nail in blaze in locust tree (12 inches diameter)	113	41	40	7.06 meters.

References—Continued.

	°	'	"	
Right chimney of Adams house.....	123	58	..	1½ miles.
Nail in blaze in cedar fence post (4 inches diameter).....	130	50	10	8.48 meters.
Left chimney of old 2½-story house.....	134	46	..	1½ miles.
Chimney of house.....	285	51	..	90 yards.
Chimney of house with four gables behind long building.....	338	49	..	1 mile.

ROBRECHT.

General locality.—Southwestern shore of St. George River on a point of land about five-eighths mile north of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is in a cultivated field about 4 feet above high water, 6 yards west of edge of bank, 35 yards southeast of edge of bank, 70 yards northwest of edge of bank, and 40 yards south by west of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument with top about 10 inches below surface of ground. Surface mark is a 3-inch-square wooden box.

References.—

	°	'	"	
"Swan" (S. 14° 42' E.).....	0	00	00	½ mile.
Chimney of pavilion.....	23	29	..	¼ mile.
Right chimney of Robrecht house.....	77	03	..	⅝ mile.
Chimney of house.....	160	10	..	⅝ mile.
Left chimney of old 2½-story house.....	166	59	..	1½ miles.
Left chimney of house.....	207	43	..	¾ mile.
Near one of two chimneys on house.....	225	28	..	⅝ mile.
Near peak of roof of house.....	312	48	..	½ mile.
Chimney of house in woods.....	356	31	..	⅝ mile.

TARKHILL.

General locality.—Northeastern side of St. George River, a short distance off shore on a small island about three-fourths mile north of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is on a small marsh island or tump about 1 foot above high water, 2 yards southwest of edge of island, 3 yards northeast of edge of island, 8 yards northwest of edge of island, and 22 yards southeast of edge of island.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Robrecht" (S. 82° 04' W.).....	0	00	00	¾ mile.
Chimney of old house.....	23	20	..	⅞ mile.
Right chimney of Adams house.....	38	56	..	¾ mile.
Peak of large barn.....	41	58	..	¾ mile.
Peak of Chadwick house.....	57	43	..	1⅝ miles.
Peak of house showing over roof of large house.....	265	22	..	1¼ miles.
Chimney of small cabin.....	270	33	..	1¼ miles.
Between two chimneys of house.....	271	05	..	1¼ miles.
Tangent of point.....	303	00	..	⅝ mile.
Peak of cottage near hotel.....	335	00	..	⅝ mile.
Left chimney of Robrecht house.....	354	54	..	½ mile.

RUSSELL.

General locality.—Southwestern shore of upper St. George River about $1\frac{1}{8}$ miles northwest of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is on the edge of a cultivated field about 2 feet above high water, 7 yards northwest of shore, 13 yards west of shore, 40 yards west-northwest of a small marsh point, and 80 yards east of a corner of a fence around yard of house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Lowell" (N. $51^{\circ} 05'$ E.).	0	00	00	$\frac{1}{4}$ mile.
Between two chimneys of Mac Adams house.	18	20		$\frac{3}{4}$ mile.
Peak of barn.	23	31		$\frac{3}{4}$ mile.
Nail in blaze in pine tree.	75	46	10	6.45 meters.
Near chimney of Todd Adams house.	223	20		90 yards.
Peak of small barn.	235	40		150 yards.
Peak of large barn.	257	05		200 yards.
Nail in blaze in small holly tree.	288	53	30	7.94 meters.
Peak of large barn.	345	44		$\frac{3}{4}$ mile.

LOWELL.

General locality.—Northeastern shore of upper St. George River about $1\frac{1}{4}$ miles north of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is in a field about 1 foot above high water, 6 yards northwest of shore, 32 yards northeast of extreme point of shore, and 33 yards east of shore.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Arbuckle" (N. $82^{\circ} 12'$ E.).	0	00	00	$\frac{3}{8}$ mile.
Peak of barn.	5	18		$\frac{1}{2}$ mile.
Left chimney of Swan Hotel.	93	06		1 mile.
Chimney of storehouse.	95	30		$\frac{3}{4}$ mile.
Peak of small barn.	98	53		$\frac{1}{2}$ mile.
Left chimney of Robrecht house.	99	51		$\frac{1}{2}$ mile.
Left lightning rod of Graves house.	104	52		$\frac{1}{2}$ mile.
Near chimney of Adams house.	155	47		$\frac{3}{4}$ mile.
Peak of large barn.	170	08		$\frac{1}{2}$ mile.
Chimney of Wall house.	197	55		$\frac{3}{4}$ mile.
Nail in blaze in persimmon tree.	237	23	10	27.58 meters.

ARBUCKLE.

General locality.—Northeastern side of upper St. George River about $1\frac{3}{8}$ miles north of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 100 yards northeast of shore, 100 yards north of a ditch, 250 yards west of corner of Adams barn, and 300 yards west by south of Adams house.

Marks.—Observed station is center point of triangle on standard cement monument. (Note: Supposed to be buried with top 12 inches below surface of ground.)

References.—

	°	'	"	
"Tarkhill" (S. $6^{\circ} 54'$ E.).	0	00	00	$\frac{5}{8}$ mile.
Right one of two chimneys on Robrecht house.	35	14		$\frac{7}{8}$ mile.
Near peak of roof of William Adams house.	78	33		$\frac{5}{8}$ mile.
Tangent of point.	86	49		$\frac{3}{8}$ mile.
Near peak of Shehan house.	175	05		$\frac{1}{4}$ mile.
Between two chimneys on J. M. Adams house.	255	02		300 yards.
Corner of shed attached to barn.	289	02		253 yards.
Southwest peak of barn.	289	30		270 yards.

WALL.

General locality.—Southwestern shore of upper St. George River about $1\frac{1}{2}$ miles north-northwest of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is in a field about 3 feet above high water, 7 yards southwest of shore, 45 yards southeast of shore, 40 yards east of shore of cove, 35 yards east of an oak tree, and 200 yards northwest of a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Lowell" (S. $76^{\circ} 47'$ E.).....	0	00	00	$\frac{1}{2}$ mile.
Chimney of Wall house.....	9	14	..	200 yards.
Peak of barn.....	35	48	..	250 yards.
Outside chimney of house.....	155	40	..	1 mile.
Left chimney of house.....	189	00	..	$1\frac{1}{2}$ miles.
Large chimney of $1\frac{1}{2}$ -story house.....	201	44	..	$1\frac{1}{2}$ miles.
East peak of barn.....	242	11	..	$1\frac{3}{4}$ miles.
Left chimney of Chadwick house.....	244	24	..	$\frac{1}{2}$ mile.
Outside chimney of house.....	257	04	..	$\frac{3}{4}$ mile.
Nail in blaze in cedar tree (2 feet diameter)...	261	08	..	5. 28 meters.
Chimney of house across creek.....	328	27	..	1 mile.
Southwest peak of barn.....	352	00	..	1 mile.

SHEHAN.

General locality.—Northeastern shore of upper St. George River about $1\frac{5}{8}$ miles northwest of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is on solid ground about 2 feet above high water, 8 yards east of shore, 40 yards northwest of shore, 30 yards north-northeast of extreme end of point, 50 yards west of an old rail fence, and north-northwest of marsh between shore and station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Lowell" (S. $36^{\circ} 10'$ E.).....	0	00	00	$\frac{3}{8}$ mile.
Chimney of Robrecht house.....	27	34	..	$1\frac{1}{8}$ miles.
Lightning rod of Adams house.....	38	32	..	$\frac{1}{2}$ mile.
Chimney of house.....	44	13	..	$\frac{1}{2}$ mile.
Peak of Wall house.....	62	28	..	$\frac{3}{8}$ mile.
Peak of house.....	96	00	..	$\frac{3}{4}$ mile.
Peak of large barn.....	121	25	..	$\frac{1}{2}$ mile.
Tangent of point up creek.....	162	50	..	$\frac{1}{4}$ mile.
Nail in blaze in small pine tree.....	254	08	50	20. 32 meters.

CHADWICK.

General locality.—Northeastern shore of upper St. George River on a prominent point between a cove and creek about 2 miles north-northwest of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is on edge of an old field about 2 feet above high water, 9 yards northeast of shore, 18 yards northwest of extreme end of point, 80 yards south-southeast of a $2\frac{1}{2}$ -story house, and 75 yards from several apple trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Wall" (S. $11^{\circ} 24'$ E.).....	0	00	00	$\frac{1}{2}$ mile.
South peak of barn.....	14	24	..	$\frac{3}{4}$ mile.
Chimney of house.....	27	16	..	$\frac{3}{4}$ mile.
Chimney of house on opposite shore.....	30	49	..	$\frac{1}{2}$ mile.
Chimney of house among trees on opposite shore.....	36	10	..	$\frac{1}{2}$ mile.

References—Continued.

	°	'	"	
Southwest peak of barn.....	39	52	..	1½ mile.
Chimney of house near woods.....	88	28	..	¾ mile.
Nail in blaze in locust tree.....	137	55	50	3.82 meters.
Near corner of house.....	171	46	..	81 yards.
South corner of house.....	212	17	..	½ mile.

GUTHIER.

General locality.—Southwestern shore of upper St. George River about 2 miles northwest of St. George Island Straits. (See chart No. 24.)

Immediate locality.—Observed station is in a grassy field about 2 feet above high water, directly opposite Chadwick farm house, 12 yards northwest of shore, 18 yards south of shore, and 35 yards southwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Chadwick" (N. 58° 50' E.).....	0	00	00	¼ mile.
Nail in blaze in cedar tree.....	34	37	30	7.05 meters.
Nail in blaze in cedar tree.....	63	31	50	8.92 meters.
Chimney on Wall house.....	80	36	..	¾ mile.
Northeast peak of barn.....	86	50	..	¾ mile.
Near peak of barn.....	104	11	..	¼ mile.
Peak of barn.....	120	12	..	¼ mile.
Chimney of small house.....	206	51	..	¼ mile.
Chimney of 1½-story house.....	286	20	..	1¼ miles.
Between two chimneys of house on Chadwick farm.....	345	16	..	¼ mile.

ST. GEORGE 4.

General locality.—Northeastern shore of Potomac River about one-eighth mile north of southern end of St. George Island and one-half mile west-southwest of entrance to Island Creek. (See chart No. 24.)

Immediate locality.—Observed station is on grassy sand about 3 feet above high water, 1 yard northeast of shore, 200 yards northwest by west of extreme end of point, and 150 yards southeast of another point. Standard cement monument marking reference station of 1909 is 26.41 meters N. 42° 16' E. of observed station. Reference station No. 1 (tile pipe set in cement) is 31.58 meters N. 14° 30' E. of observed station. Reference station No. 2 (tile pipe set in cement) is 48.98 meters N. 59° 27' E. of observed station.

Marks.—Observed station is ¼-inch iron pipe in 3-inch tile pipe set in cement with top about 12 inches below surface of ground. Surface mark is nail in stub. Reference station of 1909 is center point of triangle on standard cement monument. Reference station No. 1 is center of 3-inch tile pipe set in cement with top 3 inches above surface of ground. Reference station No. 2 is center of a 3-inch tile pipe set in cement with top about flush with surface of ground.

References.—

	°	'	"	
"Piney Point Light" (N. 52° 48' W.).....	0	00	00	3¾ miles.
Nail in blaze in pine tree (4 inches diameter).....	39	12	50	19.44 meters.
REFERENCE STATION No. 1 (tile).....	67	18	00	31.58 meters.
REFERENCE STATION (cement monument) ..	95	03	35	26.41 meters.
Nail in blaze in pine tree (5 inches diameter).....	105	41	10	26.56 meters.
REFERENCE STATION No. 2 (tile).....	112	15	25	48.98 meters.
Tall pine tree on Kitts Point.....	137	43	40	2¾ miles.
Left chimney of large colonial house on Virginia shore.....	287	13	..	4¼ miles.

PINEY POINT LIGHT.

General locality.—Northeastern shore of Potomac River on Piney Point about 5 miles northwest of entrance to St. Marys River. (See chart No. 24.)

Immediate locality.—Observed station is on a tower near a dwelling and a fog-bell tower.

Marks.—Observed station is center point of a lantern on a tower about 30 feet high.

References.—

"Blakistone Island Light" (N. $67^{\circ} 02' W.$) . . . 0 00 00 $12\frac{1}{2}$ miles.

FOXWELL.

General locality.—Northeastern shore of upper Bretons Bay about one-half mile east-southeast of Leonardtown Wharf and $1\frac{1}{4}$ miles north of entrance to Mouldy Creek. (See chart No. 25.)

Immediate locality.—Observed station is about 6 feet above high water, 12 yards northwest of shore, 2 yards from a 3-foot bank, 12 yards south of an orchard, and 25 yards east of a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Valley" (S. $65^{\circ} 19' E.$)	0	00	00		$\frac{3}{8}$ mile.
East gable of Duke house	114	28	. .		$\frac{1}{2}$ mile.
Nail in blaze in paulownia stump	129	59	40		8.50 meters.
East gable of Foxwell house	149	24	. .		25 yards.
Southeast chimney of Key house	211	06	. .		$\frac{1}{2}$ mile.
Chimney of small house	239	46	. .		$\frac{1}{4}$ mile.
South chimney of large 2-story house	277	43	. .		$\frac{1}{4}$ mile.
Nail in blaze in paulownia tree (5 inches diameter)	320	17	30		4.42 meters.
Spike in old wharf pile about 6 inches above ground	355	47	40		15.00 meters.

VALLEY.

General locality.—Northeastern shore of bend in upper Bretons Bay about three-fourths mile east-southeast of Leonardtown Wharf and $1\frac{1}{4}$ miles north-northeast of entrance to Mouldy Creek. (See chart No. 25.)

Immediate locality.—Observed station is on a narrow strip of marsh about 1 foot above high water, 15 yards east of high water, and 100 yards south of a cultivated field.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Corn" (S. $28^{\circ} 02' W.$)	0	00	00		$3\frac{3}{8}$ mile.
East gable of Duke house	50	02	. .		$\frac{3}{4}$ mile.
East chimney of Foxwell house	84	57	. .		$\frac{3}{8}$ mile.
South chimney of large 2-story house	116	27	. .		$\frac{3}{8}$ mile.
South gable of house on hill	171	08	. .		$\frac{1}{4}$ mile.
Smokestack on sawmill	210	35	. .		$\frac{3}{4}$ mile.
Northwest chimney of old farmhouse	335	38	. .		$\frac{1}{2}$ mile.

BUZZARD.

General locality.—Western shore of upper Bretons Bay on a prominent point in bend in bay about $\frac{1}{2}$ mile southeast of Leonardtown Wharf, and 1 mile north of entrance to Mouldy Creek. (See chart No. 25.)

Immediate locality.—Observed station is about 1 foot above high water, 7 yards northwest of shore, 10 yards southeast of shore, 80 yards west-northwest of a point, and 10 yards east of foot of a slope.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Foxwell" (N. 18° 28' E.)	0	00	00	1/4 mile.
South chimney of two-story house	5	18		1/2 mile.
West chimney of two-story house	33	02		3/4 mile.
Southwest chimney of one-story house	112	52		1/2 mile.
South gable of wharf house	302	58		5/8 mile.
Cupola on Catholic Academy	342	32	40	1 mile.
West chimney of Foxwell house	355	26		1/4 mile.

CORN.

General locality.—Eastern shore of upper Bretons Bay on second prominent point north of Mouldy Creek about 3/8 mile southeast of Leonardtown Wharf, and 1 1/2 miles northeast of entrance to Mouldy Creek. (See chart No. 25.)

Immediate locality.—Observed station is inside of a rail fence at the edge of a cultivated field about 3 feet above high water, 10 yards from shore, and 1/4 mile northwest of a one and one-half story farmhouse.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cedar" (S. 29° 46' W.)	0	00	00	1/4 mile.
Chimney of small two-story house	52	40		1/2 mile.
East gable of Duke house	91	30		1/2 mile.
South gable of wharf house	110	40		7/8 mile.
Southwest chimney of Key house	128	33		7/8 mile.
South gable of Foxwell house	136	28		1/2 mile.
Cross on Catholic Academy	142	50	10	1 1/2 miles.
South gable of house on hill	174	58		3/4 mile.
Smokestack of sawmill	195	39	10	1 mile.
West chimney of small two-story house	218	25		1/4 mile.
Near chimney of old farmhouse	290	00		1/4 mile.

CEDAR.

General locality.—Eastern shore of upper Bretons Bay on first prominent point north of entrance to Mouldy Creek. (See chart No. 25.)

Immediate locality.—Observed station is on a marsh point about 2 feet above high water, 15 yards east of shore, 50 yards north of a cultivated field bounded by rail fence and small cedar trees, and directly in front of a dense growth of small cedar trees and myrtle bushes.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Pine" (S. 10° 40' E.)	0	00	00	1/4 mile.
Nail in blaze in cedar tree (6 inches diameter)	24	41	00	31.91 meters.
Nail in blaze in cedar tree (8 inches diameter)	55	37	10	21.30 meters.
North chimney of small house	129	59		3/8 mile.
South gable of Duke house	160	20		1/2 mile.
Southwest chimney of Key house	180	02		1 1/4 miles.
Cross on Catholic Academy	189	02	20	1 3/4 miles.
Nail in blaze in cedar tree (3 inches diameter)	255	08	00	5.81 meters.
Nail in blaze in cedar tree (3 inches diameter)	273	57	10	2.47 meters.
Nail in blaze in cedar tree (4 inches diameter)	326	52	00	3.45 meters.

NONAME.

General locality.—Northwestern shore of upper Bretons Bay on a point about one-half mile northwest of entrance to Mouldy Creek, and 1 mile northeast of Lovers Point. (See chart No. 25.)

Immediate locality.—Observed station is about 3 feet above high water, near six old piles, 13 yards northwest of shore, 13 yards southwest of shore, 17 yards northeast of shore, and 80 yards south of a fringe of pine trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
" Buzzard (N. $31^{\circ} 23'$ E.).....	0	00	00	$\frac{1}{2}$ mile.
West gable of old farmhouse.....	45	49	..	$\frac{1}{2}$ mile.
Nail in blaze in old pile.....	82	37	00	12.70 meters.
West gable of two-story house.....	106	26	..	$\frac{3}{8}$ mile.
Chimney of two-story house.....	164	01	..	$\frac{1}{2}$ mile.
Nail in blaze in gum tree (6 inches diameter). ..	200	53	40	9.72 meters.
West chimney of house.....	206	51	..	$\frac{1}{2}$ mile.
Nail in blaze in locust tree (3 inches diameter).....	258	14	00	2.63 meters.

BELLE.

General locality.—Northwestern shore of upper Bretons Bay about one-half mile north-northeast of Lovers Point, and five-eighth mile west-northwest of entrance to Mouldy Creek. (See chart No. 25.)

Immediate locality.—Observed station is in a cultivated field about 3 feet above high water, 9 yards northwest of shore, 50 yards south by west of a clump of trees, and 65 yards southeast by east and almost in line with northeast side of a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
" Noname " (N. $52^{\circ} 11'$ E.).....	0	00	00	$\frac{3}{8}$ mile.
Left corner of left chimney of house.....	15	22	..	1 mile.
Right chimney of house on hill.....	39	35	..	$1\frac{1}{2}$ miles.
Near peak of roof of house.....	53	27	..	$\frac{3}{4}$ mile.
Chimney on middle of double house.....	118	14	..	$\frac{1}{2}$ mile.
Right chimney of house.....	134	26	..	$\frac{3}{8}$ mile.
Chimney of large house next to wharf.....	147	49	..	$\frac{3}{8}$ mile.
Left of left chimney of Adams house.....	255	03	40	65 yards.
Chimney of house.....	348	00	..	$\frac{1}{2}$ mile.

PINE.

General locality.—Eastern shore of upper Bretons Bay about one-fourth mile north-northeast of entrance to Mouldy Creek. (See chart No. 25.)

Immediate locality.—Observed station is back of a tree-fringed shore in a field about 10 feet above high water, 7 yards east of edge of bluff, and 6 yards east of a rail fence.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
" Mouldy " (S. $46^{\circ} 52'$ W.).....	0	00	00	$\frac{3}{8}$ mile.
South gable of Duke house.....	109	35	..	$\frac{3}{8}$ mile.
Nail in blaze in cedar tree (4 inches diameter).....	190	00	20	9.03 meters.
Nail in blaze in persimmon tree (4 inches diameter).....	211	06	40	17.43 meters.
Nail in blaze in pine tree (5 inches diameter). ..	336	04	00	5.72 meters.

HEALEY.

General locality.—Northwestern shore of Bretons Bay on point opposite Abells Wharf and about three-eighths mile north-northeast of Lovers Point. (See chart No. 25.)

Immediate locality.—Observed station is about 12 feet above high water, 6 yards east of edge of bank, 6 yards north of edge of bank, 35 yards west of point where rail fence and water meet, 65 yards southwest of corner of fence, 200 yards southeast of cedar trees, and 250 yards south-southeast of pine trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Lovers" (S. $0^{\circ} 03'$ E.).	0	00	00	$\frac{1}{2}$ mile.
Chimney of large house near wharf.	7	40	..	$\frac{1}{2}$ mile.
Near chimney of house.	31	42	..	$1\frac{1}{8}$ miles.
Nail in blaze in cedar tree (4 inches diameter)	64	46	40	6.02 meters.
Nail in blaze in twisted cedar tree (4 inches diameter).	105	20	20	10.33 meters.
Nail in blaze in persimmon tree (8 inches diameter).	129	26	10	16.41 meters.
Chimney of house on hill.	199	30	..	400 yards.
Near chimney of house on knoll.	234	04	..	150 yards.
Left chimney of house on hill.	269	09	..	2 miles.
Chimney on right end of house.	305	14	..	$\frac{1}{2}$ mile.
Chimney of double house.	334	39	..	$\frac{1}{2}$ mile.
Windmill.	352	59	..	$\frac{5}{8}$ mile.
Water tank.	354	12	..	$\frac{5}{8}$ mile.
Right chimney of house.	354	35	..	$\frac{5}{8}$ mile.

MOULDY.

General locality.—Southeastern shore of Bretons Bay on a point about 100 yards west of entrance to Mouldy Creek. (See chart No. 25.)

Immediate locality.—Observed station is about 6 yards south of edge of a 25-foot bluff, 17 yards from high water, 25 yards north of a cultivated field, 50 yards west of a clump of cedar trees, and 100 yards west of entrance to Mouldy Creek.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Beau" (N. $88^{\circ} 13'$ W.).	0	00	00	$\frac{3}{8}$ mile.
South chimney of two-story house.	24	30	..	$\frac{3}{4}$ mile.
Chimney of small two-story house.	34	13	..	$\frac{3}{4}$ mile.
South gable of Duke house.	81	33	..	1 mile.
Cross on Catholic Church.	91	14	40	$2\frac{1}{4}$ miles.
Cross on Catholic Academy.	91	30	30	$2\frac{1}{4}$ miles.
South gable of Foxwell house.	96	08	..	$1\frac{1}{4}$ miles.
South chimney of two-story house.	99	56	..	$1\frac{3}{8}$ miles.
Nail in blaze in ash tree (18 inches diameter).	109	38	30	63.32 meters.
Southwest chimney of one-story farmhouse.	123	57	..	1 mile.
Nail in blaze in oak tree (2 feet diameter).	165	53	10	52.09 meters.
Center of windmill.	175	57	30	$\frac{3}{8}$ mile.
Nail in blaze in ash tree (14 inches diameter).	181	24	30	54.35 meters.
West chimney of large farmhouse.	248	29	..	$\frac{1}{2}$ mile.
Top of windmill.	321	39	30	$1\frac{1}{2}$ miles.

BEAU.

General locality.—Southeastern shore of Bretons Bay on first prominent point northeast of Lovers Point about three-eighths mile west of the entrance to Mouldy Creek. (See chart No. 25.)

Immediate locality.—Observed station is about 1 foot above high water, 9 yards south of shore, 10 yards east of shore, 10 yards northwest of a small shanty, and 11 yards south-southeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Mouldy" (S. 88° 14' E.).....	0	00	00	¾ mile.
Nail in blaze in double cedar tree (10 inches diameter).....	14	05	00	5.24 meters.
Nail in blaze in cedar tree (8 inches diameter).....	41	48	30	6.20 meters.
Left corner of shanty.....	50	11	00	8.78 meters.
Nail in blaze in cedar tree (10 inches diameter).....	72	34	10	5.04 meters.
Right corner of shanty.....	83	51	10	9.89 meters.
Chimney on middle of house.....	118	27	..	½ mile.
Chimney on south end of house at wharf.....	137	20	..	½ mile.
Chimney of Adams house.....	229	33	..	½ mile.
Chimney on middle of house on hill.....	247	07	..	¾ mile.
Peak of near gable of Duke house.....	281	13	..	¾ mile.
Near peak of gable of house.....	302	36	..	1 ¼ miles.
Left chimney of house.....	346	10	..	¾ mile.
Near peak of gable of house.....	355	55	..	¾ mile.

HOLLOW.

General locality.—Western shore of Bretons Bay, about one-half of a mile northwest of Lovers Point and seven-eighths mile northeast of Paw Paw Point. (See chart No. 25.)

Immediate locality.—Observed station is at the side of a ravine about 2 feet above high water, 4 yards northwest of shore, 5 yards southeast of foot of a bank, and northeast of cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Healey" (N. 77° 52' E.).....	0	00	00	½ mile.
Chimney on middle of double house.....	39	42	..	¾ mile.
Right chimney of house.....	55	39	..	¾ mile.
Water tank.....	56	14	..	¾ mile.
Chimney of house.....	71	44	..	1 ¼ miles.
Nail in blaze in cedar tree (7 inches diameter).....	153	12	50	15.41 meters.
Nail in blaze in cedar tree (8 inches diameter).....	193	43	00	19.94 meters.
Nail in blaze in white-oak stump (18 inches diameter).....	285	30	10	4.87 meters.
Right chimney of Adams house.....	355	11	..	½ mile.

TREES.

General locality.—Western shore of Bretons Bay, about three-eighths of a mile west of Lovers Point and five-eighths mile northeast of Paw Paw Point. (See chart No. 25.)

Immediate locality.—Observed station is at edge of a cultivated field about 5 feet above high water, 15 yards west of shore, 3 yards back from edge of a bank 3 feet high, and 200 yards from a pine woods

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hollow" (N. 2° 51' W.).....	0	00	00	3/8 mile.
West gable of 2-story house.....	57	21	..	1/2 mile.
Nail in blaze in cedar tree (4 inches diameter).....	89	24	00	.....
Chimney of 2-story house.....	104	05	..	3/4 mile.
Nail in blaze in cedar stump (3 inches diameter).....	117	10	30	.....
Middle chimney on large 2-story house.....	120	29	..	5/8 mile.
Nail in blaze in cherry tree (10 inches diameter).....	213	10	40	.....

LOVERS.

General locality.—Southeastern shore of Bretons Bay, about one-eighth of a mile southeast of Lovers Point and 1 mile east of Paw Paw Point. (See chart No. 25.)

Immediate locality.—Observed station is about 4 feet above high water, 15 yards south of shore, 6 yards north of a road leading to a wharf, 50 yards north-northwest of a 1½-story house, and 100 yards east of small store with an adjoining dwelling.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Trees" (N. 67° 47' W.).....	0	00	00	1/4 mile.
North gable of wharf house.....	17	31	..	80 yards.
Near chimney of 2-story house.....	77	47	..	1 mile.
Chimney of 2-story house.....	114	31	..	1/2 mile.
Chimney of 2-story house.....	144	11	40	1/4 mile.
Chimney of 1½-story house.....	162	45	40	1/4 mile.
Chimney of 1½-story house.....	188	50	..	51 yards.
Middle chimney of large 2-story house.....	212	30	..	1/2 mile.
North gable of large barn.....	232	59	10	1/2 mile.
Chimney of store.....	355	16	..	100 yards.

PAW.

General locality.—Northwestern shore of Bretons Bay on Paw Paw Point, about 1 mile west-southwest of Lovers Point and three-fourths mile east of Cherry Cove. (See chart No. 25.)

Immediate locality.—Observed station is on marsh land near two cedar trees about 1 foot above high water, 7 yards southeast of shore, 18 yards west by north of extreme end of point, 28 yards north-east of another point, 50 yards south-southwest of several cedar trees, and 75 yards southeast of a cultivated field.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"What" (S. 20° 00' E.).....	0	00	00	3/4 mile.
Left chimney of house.....	14	00	..	3/8 mile.
Right corner of right chimney of priest's house.....	103	46	..	1 7/8 miles.
"Catholic Church Cross (Newtown Neck)".....	104	28	50	1 7/8 miles.
Nail in blaze in cedar tree (7 inches diameter).....	177	34	00	0.13 meters.
Nail in blaze in water bush (3 inches diameter).....	204	51	00	8.79 meters.
Nail in blaze in cedar tree (6 inches diameter).....	220	42	20	4.77 meters.
Left corner of left chimney of house.....	262	04	..	2 3/8 miles.
Near corner of chimney at Abells Wharf.....	279	42	..	1 mile.
Right chimney of house.....	286	10	..	1 1/2 miles.
Water tank.....	287	02	..	1 1/8 miles.
Left peak of roof of large house.....	310	32	..	1 mile.

WHAT.

General locality.—Southeastern shore of Bretons Bay, on first prominent point southwest of Lovers Point, about three-fourths of a mile south-southeast of Paw Paw Point. (See chart No. 25.)

Immediate locality.—Observed station is about 20 feet above high water, 9 yards south of edge of bank, 4 yards east of a fence, 85 yards northeast of a fence at creek, 300 yards northeast of a large barn on other side of creek, and east to northeast of trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Protestant" (N. 87° 05' W.).....	0	00	00	¾ mile.
Near peak of roof of priest's house.....	10	30	..	2¼ miles.
"Catholic Church Cross (Newtown Neck)"...	10	52	10	2¼ miles.
Near peak of roof between two chimneys of house.....	28	26	..	1½ miles.
Peak of front gable of Duke house.....	78	53	..	1¾ miles.
Nail in blaze in sassafras tree (4 inches diameter).....	122	49	00	8.04 meters.
Nail in blaze in persimmon tree (7 inches diameter).....	146	12	40	7.47 meters.
Nail in blaze in persimmon tree (6 inches diameter).....	169	14	50	7.58 meters.
Chimney of old house.....	270	19	..	250 yards.
Left peak of large barn.....	289	10	..	300 yards.
Right peak of roof of house with two chimneys.....	320	38	..	300 yards.

CHERRY COVE.

General locality.—Northwestern shore of Bretons Bay, about 2 miles north-northeast of Higgins Point and one-eighth mile west-southwest of entrance to Cherry Cove. (See chart No. 25.)

Immediate locality.—Observed station is in a field about 15 feet above high water, 12 yards north of edge of bank, 17 yards west-southwest of near corner of a 2-story house, 23 yards west-northwest of a point, 25 yards west of edge of bank, and 27 yards southwest by south of a wire fence around a garden.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Compton" (S. 73° 49' W.).....	0	00	00	¾ mile.
Peak of tin roof of priest's house.....	0	39	..	1½ miles.
"Catholic Church cross (Newtown Neck)"...	2	13	40	1½ miles.
Near peak of roof of large house.....	28	46	20	¾ mile.
Tangent of point of bank on opposite side of Cherry Cove.....	119	52	..	¾ mile.
Left chimney of house.....	131	40	..	1½ miles.
Nail in blaze in corner fence post (3 inches diameter).....	145	17	00	26.46 meters.
Left corner of house.....	166	14	20	19.95 meters.
Near corner of house.....	177	51	50	17.14 meters.
Right corner of house.....	188	05	20	24.94 meters.
Left corner of large house near Abells Wharf..	190	01	..	2 miles.
Water tank.....	196	38	..	2 miles.
Chimney of large house.....	228	19	..	2 miles.
Chimney of large house.....	240	39	..	1¾ miles.
Cupola on building in woods.....	276	42	..	1¼ miles.

PROTESTANT.

General locality.—Southeastern shore of Bretons Bay on Protestant Point opposite Cherry Cove about $1\frac{1}{8}$ miles east-northeast of Kaywood Point. (See chart No. 25.)

Immediate locality.—Observed station is on a sand bar about 2 feet above high water, 26 yards north of shore, 35 yards east by south of a cedar tree, and 35 yards northwest of entrance to a creek. Cement monument marking reference station is 29.12 meters S. $56^{\circ} 29'$ E. of observed station.

Marks.—Observed station is nail in stub with top about 12 inches above surface of sand. Reference station is center point of triangle on standard cement monument.

References.—

	o	/	''	
"Cherry Cove" (N. $21^{\circ} 54'$ W.).....	0	00	00	$\frac{1}{8}$ mile.
Chimney of house.....	0	50	..	$\frac{1}{8}$ mile.
Left chimney of house.....	27	44	..	$1\frac{3}{4}$ miles.
Peak of front gable of Duke house.....	45	08	..	$1\frac{1}{2}$ miles.
Chimney of Adams house.....	71	32	..	$2\frac{1}{4}$ miles.
Chimney outside of house at Abells Wharf..	82	37	..	$1\frac{3}{4}$ miles.
Water tank.....	87	58	..	$1\frac{3}{4}$ miles.
Left chimney of house.....	126	59	..	$\frac{3}{4}$ mile.
REFERENCE STATION.....	145	24	35	29.12 meters.
Nail in blaze in cedar tree (7 inches diameter).	145	54	20	39.51 meters.
Nail in blaze in oak tree (7 inches diameter)..	173	48	10	28.84 meters.
Nail in blaze in oak tree (20 inches diameter).	204	06	30	23.34 meters.
"Catholic Church Cross (Newtown Neck)"..	311	47	00	$1\frac{1}{8}$ miles.
Chimney on middle of roof of house.....	336	32	..	1 mile.

FENCE.

General locality.—Southeastern shore of Bretons Bay opposite Compton about $1\frac{1}{8}$ miles northeast of Kaywood Point at entrance to Bay. (See chart No. 25.)

Immediate locality.—Observed station is about 12 feet above high water, 3 yards southeast of edge of bank, 70 yards southwest of locust trees, and in front of cedar and sassafras trees. Cement monument marking reference station is 12.87 meters S. $25^{\circ} 41'$ E. of observed station.

Marks.—Observed station is nail in stub. Reference station is center point of triangle on standard cement monument.

References.—

	o	/	''	
"Compton" (N. $41^{\circ} 30'$ W.).....	0	00	00	$1\frac{1}{8}$ miles.
Near corner of large outside chimney of house	6	24	..	$1\frac{1}{8}$ miles.
Near peak of roof of house.....	32	56	..	$1\frac{1}{4}$ miles.
Chimney of house.....	48	47	..	$1\frac{1}{2}$ miles.
Largest chimney of Duke house.....	72	15	..	$1\frac{3}{4}$ miles.
Nail in blaze in apple tree (16 inches diameter).....	144	58	50	59.59 meters.
Large chimney of building among trees.....	186	31	..	$\frac{1}{8}$ mile.
Nail in blaze in persimmon tree (4 inches diameter).....	195	36	00	19.97 meters.
REFERENCE STATION.....	195	48	55	12.87 meters.
Nail in blaze in cedar tree (2 inches diameter)	232	51	20	18.10 meters.
Chimney on middle of house.....	294	55	..	1 mile.
Near end of near chimney of priest's house..	352	57	..	$1\frac{1}{4}$ miles.

COMPTON.

General locality.—Western shore of Bretons Bay on Newtown Neck about three-eighths mile south-southwest of entrance to Combs Creek, and $1\frac{3}{4}$ miles north of Kaywood Point. (See chart No. 25.)

Immediate locality.—Observed station is in the corner of a field adjoining a large brick house about 20 feet above high water, 75 yards west of shore, 75 yards south of shore, 2 yards south of a fence, 3 yards west of another fence, and 400 yards east-northeast of a church and a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Sand bar" (S. $5^{\circ} 04'$ W.)	0	00	00	$\frac{5}{8}$ mile.
Near peak of tin roof of priest's house	72	50	..	400 yards.
"Catholic Church Cross (Newtown Neck)" ..	81	07	00	400 yards.
Nail in blaze in cedar fence post (8 inches diameter)	131	39	30	5.03 meters.
Flagstaff of Compton post office	196	27	..	$\frac{1}{2}$ mile.
Chimney of store	197	00	..	$\frac{1}{2}$ mile.
Nail in blaze in cedar fence post (4 inches diameter)	219	07	00	2.01 meters.
Chimney on roof of house	248	42	..	$\frac{7}{8}$ mile.
Cupola on stable	308	03	..	$1\frac{1}{8}$ miles.
Nail in blaze in cedar tree (4 inches diameter) ..	334	19	40	9.59 meters.

SANDBAR.

General locality.—Western shore of Bretons Bay on Newtown Neck about $1\frac{1}{8}$ miles north of Kaywood Point and $1\frac{1}{4}$ miles south of Combs Creek. (See chart No. 25.)

Immediate locality.—Observed station is on a sand spit between bay and small pond about 1 foot above high water, 6 yards north of a point of trees, 75 yards west by north of a sand bar visible at low water, and 85 yards south of another point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Newtown" (S. $8^{\circ} 45'$ W.)	0	00	00	$\frac{1}{2}$ mile.
Nail in blaze in holly tree (3 inches diameter) ..	14	06	50	7.08 meters.
Nail in blaze in pine tree (7 inches diameter) ..	36	06	10	5.96 meters.
Nail in top of $1\frac{1}{2}$ -inch stub	157	31	50	12.08 meters.
Left corner of left chimney of priest's house ..	158	57	..	$\frac{5}{8}$ mile.
Flagstaff of Compton post office	181	21	..	1 mile.
Chimney of house with several gables	184	37	..	1 mile.
Left peak of tin roof	205	03	..	1 mile.
Chimney of house	218	48	..	$1\frac{1}{4}$ miles.
Right chimney of house near Abells Wharf ..	244	56	..	3 miles.
Water tank at Abells Wharf	245	16	..	3 miles.
Nail in blaze in holly tree (3 inches diameter) ..	356	11	00	4.62 meters.

DUNE.

General locality.—Eastern shore of Bretons Bay about five-eighths mile north of Higgins Point and $1\frac{1}{8}$ miles northwest of Kaywood Point. (See chart No. 25.)

Immediate locality.—Observed station is on a sanded grassy knoll about 4 feet above high water, 4 yards southeast of edge of bank, 8 yards northwest of foot of sand slope, 20 yards northeast of first tree in scant woods, 25 yards northwest of edge of woods, 55 yards west-southwest of a large pine tree at point of woods, and 75 yards east-northeast of a mud hole.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Blakistone Island Light" (S. $53^{\circ} 42'$ W.)...	0	00	00	$3\frac{3}{8}$ miles.
Chimney of house.....	28	43	..	$\frac{3}{4}$ mile.
"Catholic Church Cross (Newtown Neck)"..	89	39	20	$1\frac{1}{4}$ miles.
Right tangent of right chimney of priest's house.....	90	18	40	$1\frac{1}{4}$ miles.
Right peak of roof of railway building.....	114	03	..	$1\frac{1}{2}$ miles.
Right peak of roof between two chimneys of house.....	127	00	..	$1\frac{3}{8}$ miles.
Nail in blaze in pine tree (12 inches diameter)	189	58	30	47.76 meters.
Nail in blaze in oak tree (6 inches diameter)..	245	56	00	19.77 meters.
Nail in blaze in oak tree (11 inches diameter).	342	10	20	16.78 meters.

NEWTOWN.

General locality.—Western shore of Bretons Bay about one-half mile north of Kaywood Point and seven-eighths mile northwest of Higgins Point. (See chart No. 25.)

Immediate locality.—Observed station is about 12 feet above high water, surrounded by a fence, 9 yards west-northwest of edge of bank, 9 yards southwest of corner of fence, 10 yards north-northeast of corner of fence, 13 yards east of corner of fence, 14 yards south-southeast of corner of fence, 30 yards south-southwest of several trees, 60 yards southwest of a ditch, 75 yards south-southeast of a pond, and 85 yards southwest of a point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Dune" (N. $85^{\circ} 43'$ E.).....	0	00	00	$\frac{5}{8}$ mile.
Main chimney of house.....	153	57	..	200 yards.
Nail in blaze in cedar tree (3 inches diameter)	241	26	30	12.22 meters.
Chimney of house.....	280	50	..	$1\frac{1}{2}$ miles.
Nail in blaze in twin persimmon tree (8 inches diameter).....	306	40	40	29.56 meters.
Nail in blaze in sugarberry tree (12 inches diameter).....	323	04	20	24.89 meters.
Chimney outside of building at Abells Wharf.	337	37	..	$3\frac{1}{4}$ miles.
Large chimney of house.....	340	16	..	$3\frac{1}{4}$ miles.
Water tank.....	340	35	..	$3\frac{1}{4}$ miles.

GROVE.

General locality.—Eastern shore of Bretons Bay about one-half mile north of Higgins Point and seven-eighths mile northeast of Kaywood Point. (See chart No. 25.)

Immediate locality.—Observed station is on sanded grassy land in a grove of trees about 8 feet above high water, 3 yards east of edge of bank, 5 yards south of edge of bank, 23 yards north by east of a large oak tree, and 30 yards south-southwest of a high sand pile. Cement monument marking reference station is near twin oak trees 21.48 meters S. $34^{\circ} 32'$ E. of observed station.

Marks.—Observed station is nail in stub with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Blakistone Island Light" (S. $54^{\circ} 24'$ W.) ..	0	00	00	3 $\frac{3}{4}$ miles.
"Catholic Church Cross (Newtown Neck)" ..	93	09	30	1 $\frac{1}{4}$ miles.
Right tangent of chimney of priest's house ..	93	54	..	1 $\frac{1}{4}$ miles.
Tree (10 inches diameter)	107	09	..	5 yards.
Nail in blaze in persimmon tree (10 inches diameter)	204	01	00	8.27 meters.
Nail in blaze in forked oak tree (12 inches diameter)	243	46	30	12.31 meters.
REFERENCE STATION	271	03	45	21.48 meters.
Nail in blaze in right one of twin oak trees (12 inches diameter)	272	35	50	22.50 meters.
Oak tree (4 feet diameter)	326	09	..	23 yards.

CEDOAK.

General locality.—Eastern shore of Bretons Bay about one-eighth mile north of Higgins Point and seven-eighths mile east of Kaywood Point. (See chart No. 25.)

Immediate locality.—Observed station is about 8 feet above high water, 2 yards east of edge of bank, 11 yards north-northwest of edge of bank at cedar woods, 12 yards west-southwest of an oak tree, 30 yards south-southeast of small clump of cedar trees on point, and 40 yards south of edge of clearing. Cement monument marking reference station is 21.91 meters N. $76^{\circ} 41'$ E. of observed station.

Marks.—Observed station is nail in cedar stub about 1 inch above surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Blakistone Island Light" (S. $58^{\circ} 45'$ W.) ..	0	00	00	3 $\frac{5}{8}$ miles.
Left chimney of Colton Hotel	17	18	..	3 $\frac{1}{2}$ miles.
Chimney of house beyond edge of woods ..	28	52	..	1 $\frac{3}{8}$ miles.
Chimney on middle of house	54	17	..	$\frac{7}{8}$ mile.
Between two chimneys on right of priest's house	94	48	..	1 $\frac{5}{8}$ miles.
Left peak of roof of railway building	111	49	..	1 $\frac{7}{8}$ miles.
Nail in blaze in pine tree (13 inches diameter)	147	06	00	28.08 meters.
Nail in blaze in oak tree (14 inches diameter) ..	179	34	00	10.22 meters.
REFERENCE STATION	197	56	05	21.91 meters.
Nail in blaze in cedar tree (10 inches diameter)	222	43	40	16.19 meters.
Left tree on Higgins Point	290	59	..	$\frac{1}{8}$ mile.

KAYWOOD.

General locality.—Northern shore of Heron Island Sound on Kaywood Point. (See chart No. 25.)

Immediate locality.—Observed station is in a clear field about 8 feet above high water, 4 yards west-northwest of edge of bank, 22 yards northeast of edge of bank, 23 yards north-northeast of extreme point of bank, and 75 yards south-southwest of large gum tree at edge of woods.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Blakistone Island Light" (S. 49° 47' W.)	0	00	00	2 7/8 miles.
Chimney on near end of house	42	31	..	3 6/8 mile.
Chimney of cabin	75	41	..	3 6/8 mile.
Nail in blaze in gum tree	154	04	10	72 yards.
Right chimney of large house on hill	186	28	..	5 miles.
Near peak of roof of house	187	05	..	5 miles.
Chimney of small house	226	06	..	2 1/2 miles.

HERON.

General locality.—Northern side of Potomac River on a sand bar called Heron Island at entrances to St. Clement Bay and Bretons Bay and about 1 1/2 miles east-northeast of Blakistone Island Light. (See chart No. 25.)

Immediate locality.—Observed station is on southeastern end of sand bar remains of Heron Island.

Marks.—Observed station is awash except at low water and was not marked.

References.—None necessary.

BLAKISTONE ISLAND LIGHT.

General locality.—Northern side of Potomac River on southern end of Blakistone Island off entrance to St. Clement Bay and Bretons Bay. (See chart No. 25.)

Immediate locality.—Observed station is on a dwelling near a fog-bell tower.

Marks.—Observed station is center point of lantern on a dwelling known as Blakistone Island Light-house.

References.—

	°	'	"	
"Cobb Point Bar Light" (N. 61° 22' W.)	0	00	00	5 miles.

HERRING POND 2 (VIRGINIA).

General locality.—Southern shore of Potomac River on a point between Nomini Bay and Machodoc River about three-eighths mile east of Kingcopsco Point. (See progress map.)

Immediate locality.—Observed station is about 1 foot above high water, 2 feet south of shore, 25 yards west of a round point, 85 yards east-northeast of entrance to Herring Pond Creek, and west-northwest of a grove of cedar trees. Center one of five cedar posts marking reference station is 3 meters S. 5° 33' E. of observed station.

Marks.—Observed station is center of 4-inch tile pipe set in cement with top about flush with surface of ground. Reference station is center one of four nails in center one of five cedar posts.

References.—

	°	'	"	
"Blakistone Island Light" (N. 42° 34' W.)	0	00	00	4 1/2 miles.
Near chimney of Colton Hotel	4	18	..	5 1/2 miles.
Church Cross on Maryland shore	13	01	30	11 miles.
Right chimney of Yates house	26	29	..	5 3/4 miles.
Near corner of large house on hill	108	39	..	8 miles.
Top nail in blaze in gnarled cedar tree (8 inches diameter)	160	35	40	10.62 meters.
Nail in blaze in cedar tree (5 inches diameter)	220	44	40	19.50 meters.
REFERENCE STATION (nail in cedar stub)	217	01	00	3 meters.
Nail in blaze in stump (7 inches diameter)	227	29	30	7.52 meters.
Nail in blaze in cedar stump (12 inches diameter)	288	16	20	3.62 meters.
Tree on point	314	21	..	1/4 mile.
Tangent of woods	319	13	..	1/2 mile.

ST. CLEMENT.

General locality.—Northern shore of Heron Island Sound on Newton Neck about $2\frac{1}{4}$ miles northeast of Blakistone Island Light. (See chart No. 25.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 17 yards northeast of shore, 32 yards east of shore, 32 yards north by west of most prominent point, and 70 yards southeast of another point. Cement monument marking reference station is on line to large mulberry tree 22.01 meters N. $41^{\circ} 20'$ E. of observed station.

Marks.—Observed station is nail in stub with top about 3 inches above surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Blakistone Island Light" (S. $37^{\circ} 57'$ W.)...	0	00	00	$2\frac{1}{4}$ miles.
Near corner of left chimney of Colton Hotel...	29	09	..	$1\frac{1}{8}$ miles.
Left corner of left chimney of large house...	53	51	..	$1\frac{1}{2}$ miles.
Nail in blaze in locust tree (6 inches diameter).....	57	53	50	31.98 meters.
Peak of near gable of house on Canoe Neck Creek.....	119	23	..	$2\frac{3}{4}$ miles.
Left tangent of trees on Long Point.....	120	08	..	$\frac{3}{8}$ mile.
Nail in blaze in mulberry tree (30 inches diameter).....	183	04	40	23.30 meters.
REFERENCE STATION.....	183	31	40	22.01 meters.
Right chimney of house.....	221	59	..	$\frac{3}{8}$ mile.
Nail in blaze in locust tree (3 inches diameter).....	309	32	30	28.52 meters.

ST. PATRICK.

General locality.—Western shore of lower St. Clement Bay about $1\frac{1}{2}$ miles north of Blakistone Island and one-half mile north-northeast of entrance to St. Patricks Creek. (See chart No. 25.)

Immediate locality.—Observed station is on cultivated land about 8 feet above high water, 26 yards west-northwest of edge of bank, 17 yards east-southeast of a lone persimmon tree, 100 yards north-northeast of a rail and wire fence, and 200 yards south of a barn in corner of field. Cement monument marking reference station is about on line to persimmon tree 15.35 meters N. $59^{\circ} 51'$ W. of observed station.

Marks.—Observed station is nail in stub with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Blakistone Island Light" (S. $10^{\circ} 47'$ W.)...	0	00	00	$2\frac{1}{8}$ miles.
Peak of near gable of large house.....	55	39	30	$\frac{1}{4}$ mile.
Chimney of house.....	101	35	..	$\frac{3}{8}$ mile.
REFERENCE STATION.....	109	22	10	15.35 meters.
Nail in blaze in persimmon tree (12 inches diameter).....	109	25	30	16.32 meters.
Right peak of roof of barn.....	158	56	..	200 yards.
Right tangent of chimney of house.....	175	37	..	200 yards.
"Catholic Church Cross (Newtown Neck)".....	228	45	20	$2\frac{3}{8}$ miles.
Near corner of near chimney of priest's house.....	229	36	40	$2\frac{3}{8}$ miles.
Near chimney of Yates house.....	255	04	..	1 mile.
Chimney of left house on Blakistone Island..	357	18	..	$2\frac{1}{8}$ miles.

ROOF.

General locality.—Eastern side of St. Clement Bay about one-half mile north-northeast of entrance to bay, and three-eighths mile east-southeast of extreme end of Long Point. (See chart No. 25.)

Immediate locality.—Observed station is on western peak of roof of a barn behind a large house.

Marks.—Observed station is a 3-inch square staff fastened and braced to the western peak of roof of barn.

References.—None necessary.

CANOE.

General locality.—Western shore of lower St. Clement Bay opposite Long Point and about 2 miles north of Blakistone Island. (See chart No. 25.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 4 yards northwest of edge of bank, 4 yards southwest of a ditch and trees in hollow, and 60 yards south by east of a large apple tree. Cement monument marking reference station is 53.28 meters N. 17° $17'$ W. of observed station.

Marks.—Observed station is nail in stub with top about 2 inches above surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Blakistone Island Light" (S. 14° $12'$ W.)...	0	00	00	2¾ miles.
Chimney of small house.....	19	40	..	1½ miles.
Near end of roof of house.....	54	55	..	½ mile.
REFERENCE STATION.....	148	31	20	53.28 meters.
Nail in blaze in pear tree (26 inches diameter).....	148	34	30	54.82 meters.
Chimney outside of house.....	150	05	..	½ mile.
Left chimney of large house.....	178	54	..	¾ mile.
Chimney of house.....	216	23	..	2½ miles.
"Catholic Church Cross (Newtown Neck)"..	233	20	50	1¾ miles.
Near peak of roof of barn.....	257	32	..	1¼ miles.
Near chimney of Yates house.....	283	03	..	¾ mile.

RAILS.

General locality.—Eastern shore of St. Clement Bay about three-fourths mile northeast of Long Point and 3¼ miles north-northeast of Blakistone Island Light. (See chart No. 25.)

Immediate locality.—Observed station is about 12 feet above high water, 16 yards southeast of edge of bank, 3 yards northeast of a rail fence, 40 yards northeast of a marshy creek between two fences, and 400 yards west to northwest of woods.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Shipping" (N. 4° $08'$ W.).....	0	00	00	1¼ miles.
Chimney of house.....	35	31	..	1 mile.
"Catholic Church Cross (Newtown Neck)"..	51	15	00	¾ mile.
Near peak of roof of priest's house.....	53	32	..	¾ mile.
Nail in blaze in locust tree (5 inches diameter).....	129	00	30	5.27 meters.
Nail in blaze in cedar tree (7 inches diameter).....	240	21	50	3.77 meters.
Nail in blaze in gum tree (10 inches diameter).....	276	04	40	10.24 meters.
Near chimney of house with several gables..	295	14	..	1¼ miles.
Left chimney of large house.....	352	11	..	1¼ miles.

WOODS.

General locality.—Western shore of St. Clement Bay about 1 mile north of Long Point and one-half mile northeast of entrance to Canoe Neck Creek. (See chart No. 25.)

Immediate locality.—Observed station is about 1 foot above high water, 2 yards northwest of shore, 13 yards southeast of a bank 4 feet high, 75 yards southwest of a shell point, and southeast of a grove of pine, oak, and persimmon trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Blackstone Island Light" (S. 21° 34' W.)..	0	00	00	3½ miles.
Nail in blaze in pine tree (20 inches diameter).....	28	50	00	9.85 meters.
Nail in blaze in pine tree (10 inches diameter).....	67	11	30	13.53 meters.
Nail in blaze in pine tree (12 inches diameter).....	99	23	50	12.18 meters.
Left chimney of house.....	201	24	..	1½ miles.
Chimney of house.....	214	21	..	1¼ miles.
"Catholic Church Cross (Newtown Neck)"...	245	57	20	1½ miles.
Chimney of house.....	299	42	..	¾ mile.

CATHOLIC CHURCH CROSS (NEWTOWN NECK).

General locality.—On Newtown Neck about halfway between Bretons Bay and St. Clement Bay and 2 miles north-northeast of Heron Island Sound. (See chart No. 25.)

Immediate locality.—Observed station is on Catholic Church situated on main road on Newtown Neck.

Marks.—Observed station is center of cross on Catholic Church.

References.—None necessary.

CHAPEL.

General locality.—Eastern shore of St. Clement Bay on a point about five-eighths mile southeast of Shipping Point, and 1½ miles northeast of Long Point. (See chart No. 25.)

Immediate locality.—Observed station is on southwest slope of a point about 15 feet high, 10 feet above high water, 5 yards northeast of edge of bank, 7 yards southeast of edge of bank, 7 yards east-southeast of point of bank, 25 yards west-southwest of a cultivated field, and 3 to 10 yards west to southwest of a dense growth of young pine trees. Cement monument marking reference station is about 9 yards from edge of bank on edge of woods and cultivated field 17.12 meters N. 65° 49' E. of observed station.

Marks.—Observed station is nail in stub with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Shipping" (N. 34° 20' W.).....	0	00	00	¾ mile.
Chimney on right end of house.....	0	54	..	1¼ miles.
Peak of front gable of house.....	16	49	..	2 miles.
Near peak of roof on Stones Wharf.....	24	02	..	3¼ miles.
Near peak of roof of small house.....	54	49	..	¾ mile.
Peak of gable of house.....	66	22	..	¾ mile.
Nail in blaze in pine tree (6 inches diameter). 81	18	..	..	5.68 meters.
REFERENCE STATION.....	100	09	10	17.12 meters.
Nail in blaze in pine tree (4 inches diameter). 119	07	30	..	3.10 meters.
Nail in blaze in pine tree (3 inches diameter). 159	04	30	..	9.38 meters.
Near peak of roof of barn.....	225	28	..	1 mile.
Chimney of Yates house.....	240	52	..	1¾ miles.
Chimney outside of house.....	302	51	..	¾ mile.
Near peak of gable of house.....	345	17	30	¾ mile.

SHIPPING.

General locality.—Western shore of St. Clement Bay on Shipping Point about three-eighths mile southwest of Howards Wharf and $1\frac{3}{4}$ miles north-northeast of Long Point. (See chart No. 25.)

Immediate locality.—Observed station is on a sand and grass point about 1 foot above high water, 5 yards southwest of shore, 6 yards north of shore, 16 yards west-northwest of extreme end of point, 20 yards east-southeast of woods on point, and 300 yards northeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Catholic Church Cross (Newtown Neck)" (S. 46° 09' E.).	0	00	00	1 mile.
Right tangent of right chimney of priest's house.	0	07	..	1 mile.
Left peak of roof of barn.	39	34	..	$1\frac{1}{2}$ miles.
Left tree on Long Point.	62	53	..	1 mile.
Post of bird house.	104	23	..	250 yards.
Chimney on ell of Colton house.	114	04	..	300 yards.
Nail in blaze in cedar tree (3 inches diameter).	159	05	50	18.51 meters.
Nail in blaze in cedar tree (5 inches diameter).	184	37	20	17.18 meters.
Right chimney of house.	193	41	..	$\frac{5}{8}$ mile.
Flagstaff at Maycroft.	205	06	40	1 mile.
Nail in blaze in cedar tree (3 inches diameter).	221	28	30	3.76 meters.
Peak of front gable of house.	240	48	..	2 miles.
Near peak of front gable of house.	317	34	..	$\frac{3}{8}$ mile.

MANSION.

General locality.—Eastern shore of St. Clement Bay about one-half mile southeast of Howards Wharf and 2 miles north-northeast of Long Point. (See chart No. 25.)

Immediate locality.—Observed station is about 20 feet above high water, 6 yards northeast of edge of bank, 100 yards west by south of a corncrib, 110 yards west-northwest of an outbuilding, 125 yards southwest of a house, and 85 yards west of fruit trees. Cement monument marking reference station is 44.26 meters N. 19° 04' E. of observed station.

Marks.—Observed station is nail in stub with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

"Shipping" (N. 84° 21' W.).	0	00	00	$\frac{5}{8}$ mile.
Right chimney of house	25	21	..	1 mile.
Nail in blaze in cedar tree (7 inches diameter).	60	41	10	47.34 meters.
Nail in blaze in cedar tree (7 inches diameter).	102	21	10	43.77 meters.
REFERENCE STATION.	103	24	35	44.26 meters.
Near corner of house.	143	38	..	127 yards.
Near corner of corncrib.	163	17	..	99 yards.
Nail in blaze in apple tree (14 inches diameter).	182	45	20	77.64 meters.
Near corner of outbuilding.	203	42	..	111 yards.
"Catholic Church Cross (Newtown Neck)".	253	20	00	$\frac{5}{8}$ mile.
Peak of front gable of Colton house.	353	10	..	$\frac{3}{8}$ mile.

HOWARDS.

General locality.—Northeastern shore of St. Clement Bay about $2\frac{1}{4}$ miles north-northeast of Long Point, one-half mile northeast of Shipping Point and one-eighth mile east of Howards Wharf. (See chart No. 25.)

Immediate locality.—Observed station is in a field about 20 feet above high water, 8 yards north of edge of bank, 16 yards west-northwest of edge of ravine, 18 yards northwest of extreme end of point of bank, 70 yards west of another ravine, 100 yards west-northwest of a wire fence, and 250 yards south of a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Chapel" (S. $0^{\circ} 26'$ W.).....	0	00	00	$1\frac{1}{8}$ mile.
Left chimney of Yates house.....	16	33	..	$2\frac{1}{4}$ miles.
Chimney outside of house.....	38	37	..	$1\frac{1}{8}$ miles.
Nail in blaze in cedar tree (6 inches diameter).....	54	54	40	8.62 meters.
Nail in blaze in cherry tree (7 inches diameter).....	85	26	10	23.75 meters.
Cupola on Maycroft barn.....	124	50	..	1 mile.
Flagstaff at Maycroft.....	127	33	..	1 mile.
Oak tree (3 feet diameter).....	150	38	..	200 yards.
Chimney of house.....	156	01	..	250 yards.
Left peak of roof of barn.....	223	31	..	250 yards.
Near peak of roof of house.....	241	39	..	$\frac{1}{4}$ mile.
Chimney of house in woods.....	284	21	..	$\frac{3}{8}$ mile.
Nail in blaze in cedar tree (3 inches diameter).....	339	29	00	12.15 meters.

MILEYS.

General locality.—Western shore of St. Clement Bay about one-half mile west-northwest of Howards Wharf, one-half mile northwest of Shipping Point, and one-eighth mile north of entrance to Mileys Creek. (See chart No. 25.)

Immediate locality.—Observed station is among water bushes on marsh land about 1 foot above high water, 12 yards southwest of shore, 20 yards west of shore, and 150 yards east-southeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Shipping" (S. $29^{\circ} 08'$ E.).....	0	00	00	$\frac{1}{2}$ mile.
Left chimney of house.....	144	08	..	150 yards.
Right corner of chimney of house.....	154	56	..	150 yards.
Near peak of roof of house.....	183	18	..	$\frac{1}{4}$ mile.
Between two chimneys of old house.....	209	36	..	$\frac{1}{2}$ mile.
Right chimney of old house.....	247	47	..	$\frac{3}{8}$ mile.
Right chimney of Howard house.....	295	02	..	$\frac{1}{2}$ mile.
Left corner of left chimney of priest's house... 348	13	40	..	$1\frac{1}{2}$ miles.
"Catholic Church Cross (Newtown Neck)"... 348	39	20	..	$1\frac{1}{2}$ miles.

BANK.

General locality.—Eastern shore of St. Clement Bay about one-fourth mile north of Howards Wharf, five-eighths mile north-northeast of Shipping Point and five-eighths mile east-northeast of entrance to Mileys Creek. (See chart No. 25.)

Immediate locality.—Observed station is in a field adjoining an orchard back of a tree-fringed shore about 12 feet above high water, 20 yards east of edge of field, 17 yards south of a small gully, and 50 yards north of a fence dividing orchard and field. Cement monument marking reference station is 18.53 meters N. $42^{\circ} 08'$ W. of observed station.

Marks.—Observed station is nail in stub with top about flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Shipping" (S. 25° 34' W.).....	0	00	00	5½ mile.
Near chimney outside small house on Mileys Creek.....	42	12	..	¾ mile.
Chimney outside right end of house.....	55	15	..	¾ mile.
Flagstaff at Maycroft.....	80	05	..	¾ mile.
REFERENCE STATION.....	112	17	40	18.53 meters.
Nail in blaze in cherry tree (22 inches diameter).....	112	22	30	19.60 meters.
Right chimney of house.....	155	16	..	1 mile.
Nail in blaze in walnut tree (13 inches diameter).....	182	37	30	13.49 meters.
Tree at corner of orchard.....	280	26	..	66 yards.
Chimney of house.....	327	52	..	1½ mile.
Nail in blaze in cherry tree (18 inches diameter).....	353	37	00	37.03 meters.

PROFOUND.

General locality.—Eastern shore of upper St. Clement Bay about one-half mile south of Cedar Point and 1 mile north of Shipping Point. (See chart No. 25.)

Immediate locality.—Observed station is on the southern side of the point on which the Hudson house is located about 12 feet above high water, 3 yards east-southeast of north corner and 3 yards north-northeast of south corner of a chicken house, 25 yards west of extreme end of point, 16 yards southeast of a well, 5 yards southwest of a drain from well, 16 yards southwest of edge of bank, and 4 yards southeast of top of bank.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cecil" (N. 70° 56' E.).....	0	00	00	½ mile.
Nail in blaze in cherry tree (7 inches diameter).....	18	02	35	3.54 meters.
Chimney of house on Howard Point.....	60	16	..	¾ mile.
"Catholic Church Cross (Newtown Neck)".....	78	55	10	1¾ miles.
Near outside chimney of house.....	120	50	..	½ mile.
Left corner of chicken house.....	132	30	20	1.84 meters.
Left side of left chimney of Hudson house.....	201	54	20	44 yards.
Right corner of chicken house.....	213	14	..	2.30 meters.
Nail in blaze in right branch of pear tree (35 inches diameter).....	218	35	40	6.10 meters.
Near corner of kitchen.....	233	32	..	14.35 meters.
Center of standpipe at well.....	253	09	30	13.21 meters.
Near corner of right chimney of house.....	253	44	..	¾ mile.
Peak of front gable of house.....	286	31	..	¾ mile.
Nail in blaze in apple tree (14 inches diameter).....	296	38	30	8.79 meters.
Peak of front gable of house.....	316	27	..	2 miles.
Near corner of near chimney of house.....	358	54	..	½ mile.

CECIL.

General locality.—Eastern shore of upper St. Clement Bay about one-half mile southeast of Cedar Point and $1\frac{1}{8}$ miles north of Shipping Point. (See chart No. 25.)

Immediate locality.—Observed station is in a field about 12 feet above high water, 14 yards northeast of extreme edge of bank, 14 yards east of edge of bank, 21 yards southeast of edge of bank, 25 yards north of a marshy gully, 130 yards west-southwest of a fence surrounding a farmhouse, and 135 yards west-southwest of a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Mileys" (S. $35^{\circ} 54'$ W.).....	0	00	00	$\frac{3}{4}$ mile.
Near corner of near chimney of house.....	5	41	40	$\frac{3}{4}$ mile.
Near corner of chimney outside of house.....	16	58	..	$\frac{3}{4}$ mile.
Peak of front gable of house.....	85	56	..	$\frac{1}{2}$ mile.
Near peak of roof on Cobrums Wharf.....	99	01	..	$\frac{1}{8}$ mile.
Largest chimney of house on ridge.....	111	24	..	$2\frac{3}{4}$ miles.
Near corner of chimney of house on ridge....	132	38	..	$2\frac{1}{2}$ miles.
Peak of front gable of house.....	160	58	..	$1\frac{3}{4}$ miles.
Near corner of house.....	206	52	20	136 yards.
Nail in blaze in cedar tree (5 inches diameter).....	281	10	20	15.07 meters.
Near peak of roof of large barn.....	292	43	..	$\frac{3}{4}$ mile.
Chimney of house.....	316	25	20	$\frac{5}{8}$ mile.

RADEC.

General locality.—Western shore of upper St. Clement Bay on Cedar Point about three-eighths of a mile southeast of Cobrums Wharf and $1\frac{1}{4}$ miles south of Stones Wharf. (See chart No. 25.)

Immediate locality.—Observed station is on a point about 3 feet above high water, 23 yards northwest of shore, 32 yards south of shore, 75 yards west of extreme end of point, 45 yards northeast of outlet of a small pond, and 14 yards north-northeast of a small cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Place" (N. $47^{\circ} 42'$ E.).....	0	00	00	$\frac{1}{2}$ mile.
Nail in blaze in cedar tree (6 inches diameter).....	16	43	30	17.80 meters.
Left point of roof of house.....	51	49	..	$\frac{3}{4}$ mile.
Left chimney of house on Howard Point....	79	13	..	$1\frac{1}{8}$ miles.
Right side of right chimney of Hudson house.	110	59	..	$\frac{1}{2}$ mile.
Nail in blaze in cedar tree (7 inches diameter).....	124	00	50	13.03 meters.
Right tangent of house.....	130	00	..	$\frac{1}{8}$ mile.
Peak of front gable of house.....	225	35	..	$\frac{3}{8}$ mile.
Near peak of roof of wharf house.....	241	18	40	$\frac{3}{8}$ mile.
Chimney of house.....	251	59	..	$\frac{3}{4}$ mile.
Near peak of roof on Stones Wharf.....	283	39	30	$1\frac{1}{4}$ miles.
Left chimney of house.....	284	44	30	$1\frac{1}{4}$ miles.
Left tangent of left chimney of old house....	342	08	..	$\frac{3}{4}$ mile.
Nail in blaze in cedar tree (14 inches diameter).....	351	42	00	25.89 meters.

PLACE.

General locality.—Eastern shore of upper St. Clement Bay about three-fourths of a mile east of Cobrums Wharf, five-eighths of a mile southeast of Guest Point and one-half of a mile east-north-east of Cedar Point. (See chart No. 25.)

Immediate locality.—Observed station is on the southern edge of a cultivated field about 10 feet above high water, 4 yards north of edge of bank, 20 yards east-southeast of edge of bank, 40 yards east-northeast of extreme end of marsh point, 50 yards north of edge of marsh, and 95 yards west-northwest of a corn crib.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Guest" (N. $41^{\circ} 32'$ W.).....	0	00	00	$\frac{5}{8}$ mile.
Left tangent of left chimney of large house..	57	46	..	$\frac{1}{4}$ mile.
Left tangent of chimney of shack.....	162	05	..	112 yards.
Nail in blaze in apple trees (5 inches diameter).....	165	35	30	15.43 meters.
Nail in blaze in old stump (5 inches diameter).....	197	51	40	6.53 meters.
Near peak of roof of house on next point....	226	05	..	$\frac{5}{8}$ mile.
Chimney outside near end of house.....	251	10	..	$1\frac{1}{4}$ miles.
Right tangent of right chimney of Hudson house	261	35	..	$\frac{7}{8}$ mile.
Peak on front gable of house.....	287	16	..	$\frac{5}{8}$ mile.
Near peak of roof on Cobrums Wharf.....	319	05	..	$\frac{3}{4}$ mile.

COBRUMS.

General locality.—Western shore of upper St. Clement Bay on southern side of entrance to Tomakokin Creek, about 1 mile south-southwest of Stones Wharf and 100 yards northwest of Cobrums Wharf. (See chart No. 25.)

Immediate locality.—Observed station is on a marsh point about 2 feet above high water, 65 yards north-northwest of shore end of Cobrums Wharf, 7 yards south of shore, 8 yards southwest of shore, 12 yards west of shore at extreme end of point, and 17 yards east-northeast of a fence.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Tomakokin" (N. $38^{\circ} 47'$ W.).....	0	00	00	$\frac{3}{8}$ mile.
Chimney on near end of house.....	14	50	..	$\frac{3}{8}$ mile.
Left tangent of left chimney of house on hill.	42	17	..	$1\frac{3}{4}$ miles.
Near peak of roof of house on Stones Wharf..	53	01	..	1 mile.
Peak of front gable of house.....	88	56	..	$1\frac{1}{2}$ miles.
Left tangent of left chimney of old house....	121	54	..	$\frac{1}{8}$ mile.
Left corner of house on Cobrums Wharf.....	177	28	30	70 yards.
Right corner of house on Cobrums Wharf....	184	10	..	65 yards.
Right chimney of house.....	190	12	..	$\frac{1}{2}$ mile.
Nail in blaze in one of several bushes.....	255	07	50	17.04 meters.
Near peak of roof of barn.....	264	28	..	$\frac{1}{8}$ mile.
Nail in blaze in cherry tree (3 feet diameter).	306	25	40	30.28 meters.

GUEST.

General locality.—Eastern shore of upper St. Clement Bay on Guest Point, about one-half mile northeast of Cobrums Wharf and five-eighths mile south-southeast of Stones Wharf. (See chart No. 25.)

Immediate locality.—Observed station is on a marsh point about 3 feet above high water, 32 yards north of shore, 43 yards northeast of shore, 45 yards east of shore, 95 yards west-northwest of south corner of a fence, and 175 yards south-southwest of north corner of a fence at edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Stones" (N. 16° 55' W.)	0	00	00	5/8 mile.
Near peak of roof on Stones Wharf	1	58	..	5/8 mile.
Near corner of highest chimney on Greenwell house	5	06	..	3/4 mile.
Cedar tree	21	35	..	150 yards.
Left corner of chimney of house	61	55	..	150 yards.
Peak of near gable of house on hill	65	37	..	1 mile.
Near peak of roof of house	100	13	..	1/4 mile.
Near corner of near chimney of old house	129	55	..	1/4 mile.
Left chimney of house	180	27	..	1 3/8 miles.
Left tangent of left chimney of Hudson house	206	11	..	1 3/8 miles.
Near chimney of house	211	20	..	5/8 mile.
Chimney on middle of house among trees	217	19	..	5/8 mile.
Nail in blaze in cedar tree (6 inches diameter)	239	53	50	12.57 meters.
Near peak of roof on Cobrums Wharf	243	57	..	1/2 mile.
Nail in blaze in locust tree (6 inches diameter)	260	31	50	20.25 meters.
Near corner of chimney of house on hill	326	05	..	1 3/4 miles.
Near corner of largest chimney of house on hill	331	50	..	1 7/8 miles.

TOMAKOKIN.

General locality.—Western shore of upper St. Clement Bay on northern side of entrance to Tomakokin Creek, about three-eighths mile northwest of Cobrums Wharf and three-fourths mile southwest of Stones Wharf. (See chart No. 25.)

Immediate locality.—Observed station is on the edge of a cultivated field about 4 feet above high water, 4 yards west of shore, 12 yards northwest of high water, 14 yards south-southwest of a walnut tree, and 300 yards south-southeast of a barn.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Guest" (N. 84° 01' E.)	0	00	00	5/8 mile.
Left corner of left chimney of old house	13	15	..	1 mile.
Near peak of roof on Cobrums Wharf	57	33	..	3/8 mile.
Right peak of roof of barn	71	52	..	1/4 mile.
Near corner of chimney of house	135	25	..	3/8 mile.
Left tangent of left chimney of house	181	21	..	3/8 mile.
Nail in blaze in mulberry tree (6 inches diameter)	188	46	40	29.18 meters.
Nail in blaze	200	36	50	40.31 meters.
Right peak of roof of barn	252	21	..	300 yards.
Chimney of house showing over barn roof	289	28	..	1/8 mile.
Right chimney of Greenwell house	306	49	..	3/8 mile.
Near peak of roof on Stones Wharf	307	52	..	3/4 mile.
Nail in blaze in walnut tree (11 inches diameter)	310	31	30	12.71 meters.
Chimney of old house near Guest Point	354	58	..	5/8 mile.

DYNARD.

General locality.—Western shore of upper St. Clement Bay about one-half mile southwest of Stones Wharf and one-fourth mile north of Tomakokin Creek. (See chart No. 25.)

Immediate locality.—Observed station is in an angle of rail fence in corner of a cultivated field about 2 feet above high water, 8 yards west of shore, 9 yards west-southwest of shore, and 9 yards northwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	° ' "			
"Turf" (N. 3° 00' E.)	0	00	00	3/8 mile.
Right chimney of Greenwell house	31	05		1/2 mile.
Near peak of roof on Stones Wharf	32	59		1/2 mile.
Near corner of chimney of house	73	11		1/2 mile.
Near corner of chimney of house	97	26		1/2 mile.
Nail in blaze in persimmon tree (8 inches diameter)	101	27	30	2.42 meters.
Near corner of chimney of old house	107	54		1/2 mile.
Left cedar tree on Cedar Point	150	05		7/8 mile.
Right chimney of house	157	13		7/8 mile.
Near peak of roof on Cobrums Wharf	163	21		3/4 mile.
Nail in blaze in cedar fence post	181	16	40	2.45 meters.
Chimney of house	210	16		1/4 mile.
Nail in blaze in mulberry tree (10 inches diameter)	325	04	00	4.85 meters.

TURF.

General locality.—Western shore of upper St. Clement Bay on a point about three-eighths mile west of Stones Wharf. (See chart No. 25.)

Immediate locality.—Observed station is in a cultivated field about 2 feet above high water, 26 yards south-southwest of shore, 27 yards northwest of shore, 32 yards west of shore, 90 yards north of a point, 300 yards east-northeast of a house, and 200 yards east-northeast of a wire fence.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	° ' "			
"Stones" (N. 80° 29' E.)	0	00	00	1/4 mile.
Right peak of roof on Stones Wharf	3	36		3/8 mile.
Left chimney of house	86	38		1 1/4 miles.
Left peak of roof on Cobrums Wharf	93	17		7/8 mile.
Left tree on point	95	22		75 yards.
Near peak of roof of barn	152	27		300 yards.
Right chimney of house	173	06		300 yards.
Right chimney of house behind trees	226	31		1/4 mile.
Left chimney of house on hill	252	10		2 miles.
Right chimney of house	290	11		1 mile.
Right chimney of Greenwell house	352	57		1/2 mile.

STONES.

General locality.—Eastern shore of upper St. Clement Bay near Stones Wharf about five-eighths mile north-northwest of Guest Point. (See chart No. 25.)

Immediate locality.—Observed station is on a point about 54 yards west-northwest of northern end of large wharf house, 5 yards northeast of extreme end of point, 5 yards southeast of shore, 30 yards south of a board fence, and 65 yards south-southwest of foot of a hill.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Guest" (S. 16° 55' E.).....	0	00	00	5/8 mile.
Left chimney of house.....	0	23	30	1 5/8 miles.
Left chimney of house.....	16	16	..	1 1/4 miles.
Left peak of roof on Cobrums Wharf.....	26	55	30	1 mile.
Front gable of house.....	30	04	30	1 1/8 miles.
Right corner of right chimney of house.....	94	41	20	1/2 mile.
Right corner of large chimney of house on hill.....	130	28	..	1 3/8 miles.
Middle of post at left corner of board fence.....	185	44	30	28 yards.
Right corner of right one of two chimneys of Greenwell house.....	236	25	..	1/8 mile.
Peak of north gable of roof of large house on Stones Wharf.....	295	47	..	54 yards.
Peak of south gable of roof of large house on Stones Wharf.....	315	22	..	50 yards.

BARBER.

General locality.—Northeastern shore of Wicomico River about three-fourths mile north-northeast of Stoddard Point. (See chart No. 26.)

Immediate locality.—Observed station is on grass land about 2 feet above high-water mark, 3 yards north of shore, 20 yards west of trees which extend inland along creek, 4 yards southwest by west of a corner of a fence and 15 yards southeast of another corner of a fence.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Stoddard" (S. 9° 46' W.).....	0	00	00	1 1/8 miles.
Left chimney of Stoddard house.....	3	27	..	1 1/8 miles.
Near peak of roof between two chimneys.....	45	15	..	1 1/2 miles.
Chimney on left end of small house.....	62	54	..	1 1/2 miles.
Nail in blaze in top fence rail.....	136	06	..	10.62 meters.
Nail in blaze in cedar tree (5 inches diameter).....	155	29	..	10.75 meters.
Nail in blaze in top of chestnut fence post.....	245	24	..	3.43 meters.
Nail in blaze in persimmon tree (5 inches diameter).....	259	16	..	13.94 meters.
Tangent of point.....	299	13	..	1/4 mile.
Near large chimney of negro quarters.....	302	07	..	1 1/8 miles.

UPPER.

General locality.—Southwestern shore of Wicomico River on Stoddard Point (upper point) about $2\frac{1}{4}$ miles north-northwest of Mills Point. (See chart No. 26.)

Immediate locality.—Observed station is on a long narrow point about 2 feet above high-water mark, 5 yards south of side of point, 8 yards northwest of side of point, 38 yards west of high-water mark on middle of point and 138 yards west by north of high-water mark on extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Stoddard" (S. $27^{\circ} 38'$ E.).....	0	00	00	$\frac{1}{2}$ mile.
Right chimney of Stoddard house.....	9	12		$\frac{1}{2}$ mile.
Left peak of roof of barn.....	33	02		$\frac{1}{2}$ mile.
Left chimney of old house.....	49	29		$\frac{1}{2}$ mile.
Tangent of next point.....	141	07		$\frac{5}{8}$ mile.
Right chimney of house on ridge.....	179	15		3 miles.
Chimney outside small house on opposite shore.....	213	28		$1\frac{1}{4}$ miles.
Near corner post of piazza of large house.....	247	47		$1\frac{3}{8}$ miles.
Chimney top of Key house.....	296	04		$1\frac{1}{2}$ miles.

KEY.

General locality.—Northeastern shore of Wicomico River on a high bluff about 1 mile north of Cohouck Point. (See chart No. 26.)

Immediate locality.—Observed station is about 30 feet above high-water mark in an orchard, about 24 yards northeast of edge of bank, 49 yards north of edge of bank, 15 yards east of edge of bank, 130 yards south-southwest of negro quarters and 130 yards west of fence which incloses an orchard.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Stoddard" (S. $70^{\circ} 48'$ W.).....	0	00	00	$1\frac{1}{8}$ miles.
Near corner of near chimney on Stoddard house.....	0	29		$1\frac{1}{4}$ miles.
Near corner of near chimney of small house..	15	05		$1\frac{3}{8}$ miles.
Peak of roof between two chimneys on house..	17	13		2 miles.
Peak of roof of very large barn.....	56	52		3 miles.
Chimney on middle of roof on 2-story house..	62	06		3 miles.
Near corner of near chimney of negro's quarters.....	116	54		130 yards.
Nail in blaze in apple tree (12 inches diameter).....	135	58		22.15 meters.
Chimney of Key house.....	164	37		$\frac{1}{4}$ mile.
Nail in blaze in apple tree (14 inches diameter).....	168	57		13.39 meters.
Peak of roof of large barn.....	259	16		$\frac{1}{2}$ mile.
Nail in blaze in apple tree (12 inches diameter).....	281	25		7.94 meters.
Peak of roof of house on piles.....	347	23		$1\frac{3}{4}$ miles.
Between two chimneys of large brick house on hill.....	357	45		$2\frac{1}{2}$ miles.

STODDARD.

General locality.—Western shore of Wicomico River about one-half mile south-southeast of Stoddard Point and 1 mile west-northwest of Cohouck Point. (See chart No. 26.)

Immediate locality.—Observed station is on gravel, grass, and shell point, near a lone gum tree, about 2 feet above high-water mark, 6 yards south-southwest of side of point, 6 yards north of side of point, 10 yards west of extreme end of point, and 158 yards east-northeast of Stoddard house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Upper" (N. 26° 37' W.).....	0	00	00	1/2 mile.
Outside chimney of small house.....	23	08	..	1 1/2 miles.
Peak of front gable of large house on ridge...	52	54	..	1 7/8 miles.
Chimney on top of Key house.....	94	47	..	1 1/2 miles.
Chimney outside of 2 1/2 story house.....	153	58	..	2 3/8 miles.
Right chimney of large house.....	172	38	..	2 miles.
Peak of roof of house on Chaptico Wharf.....	180	19	..	2 5/8 miles.
Chimney top of house on piles.....	228	37	..	1/2 mile.
Near corner of chimney on Stoddard house..	284	44	..	158 yards.
Nail in blaze in pear tree (24 inches diameter).	315	29	..	4.58 meters.
Nail in blaze in pear tree (4 inches diameter).	349	47	..	9.41 meters.

COHOUCK.

General locality.—Eastern shore of Wicomico River on Cohouck Point on the northern side of entrance to Chaptico Bay. (See chart No. 26.)

Immediate locality.—Observed station is on Cohouck Point, about 6 feet above high-water mark, 12 yards east of edge of bank, 35 yards south of edge of bank, 85 yards northeast of extreme point and about 25 yards north of marsh.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Key" (N. 3° 29' E.).....	0	00	00	7/8 mile.
Nearest chimney on negro quarters.....	0	27	..	1 mile.
Near peak of roof of barn.....	26	38	..	1 mile.
Chimney outside near end of 2 1/2-story house.	128	58	..	3/4 mile.
Right chimney of Lyon house near Mills				
Point.....	171	29	..	1 1/3 miles.
Chimney on flat roof house near mouth of				
Bowmans Creek.....	226	56	..	2 miles.
Chimney on far end of house.....	261	43	..	1 3/8 miles.
Chimney on house on piles.....	270	53	..	1 1/8 miles.
Peak of front gable of house on ridge.....	352	51	..	2 1/4 miles.

HAYDEN.

General locality.—Western shore of the Wicomico River about 1 1/4 miles west of Cohouck Point. (See chart No. 26.)

Immediate locality.—Observed station is surrounded by water bushes on marshy land, about 1 foot above high water, 5 yards northwest of shore and 17 yards southeast of line of trees on top of bank. Cement monument marking reference station is 11.50 meters N. 54° 34' W. of observed station.

Marks.—Observed station is nail in stub with top 3 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fact" (S. 41° 35' E.).....	0	00	00	1 3/8 miles.
Between two main chimneys of large house				
below Chaptico Wharf.....	5	11	..	2 3/8 miles.
West roof peak of house on Chaptico Wharf..	6	51	..	2 1/4 miles.

References.—Continued.

	°	'	"	
Chimney on middle of square house.....	65	06	..	5½ mile.
Nail in blaze in cedar tree (18 inches diameter).....	124	14	..	23.45 meters.
Nail in blaze in locust tree (8 inches diameter).....	155	23	..	16.55 meters.
REFERENCE STATION.....	167	01	20	11.51 meters.
Nail in blaze in oak tree (8 inches diameter).....	213	29	..	18.74 meters.
Chimney on Key house.....	275	45	..	1¾ miles.
Chimney of Maddox house.....	344	28	..	3¼ miles.
Right chimney outside of old house.....	354	31	..	1¾ miles.

PERRY.

General locality.—Southeastern shore of Chaptico Bay, about 1 mile northeast of Mills Point and ½ mile southeast of Colhouck Point. (See chart No. 26.)

Immediate locality.—Observed station is in an open field, about 20 feet above high-water mark, 8 yards northwest of edge of bank, 9 yards south-southwest from edge of gully in bank, 5 yards south of edge of bank of gully, and about 150 yards north-northeast of creek.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fact" (S. 51° 10' W.).....	0	00	00	1 mile.
Chimney on right end of house.....	5	41	..	2¾ miles.
Chimney on flat-roof house.....	15	03	..	2½ miles.
Left chimney of Crane house.....	31	37	..	3½ miles.
Nail in blaze in locust tree (3 inches diameter).....	42	34	..	10.49 meters.
Nearest chimney on larger part of double brick house.....	42	50	..	3½ miles.
Left chimney of house on piles.....	55	28	..	1¾ miles.
Near peak of roof on house.....	62	53	..	2 miles.
Near corner of near chimney of Stoddard house.....	66	59	..	2 miles.
Nail in blaze in locust tree (3 inches diameter).....	81	40	..	8.44 meters.
Peak of front gable of house on ridge.....	113	51	..	3 to 4 miles.
Nail in blaze in locust tree (8 inches diameter).....	136	40	..	5.95 meters.
Near chimney of large house on ridge.....	169	08	..	1½ miles.
Chimney outside of 2½-story house.....	289	15	..	150 yards.

BURR.

General locality.—Western shore of Wicomico River directly opposite mouth of Chaptico Bay and three-fourths mile north of Bowmans Creek. (See chart No. 26.)

Immediate locality.—Observed station is on hard ground between a sloping bank 10 feet high covered with trees and a marshy shore, about 2 feet above high-water mark, 18 yards northwest of extreme point 23 yards north of shore, 17 yards southwest of shore, and 9 yards southeast of bottom of bank.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fact" (S. 65° 59' E.).....	0	00	00	1¼ miles.
Between two chimneys of large house on ridge.....	16	39	..	4¾ miles.
West end of peak of roof of house on Chaptico Wharf.....	17	15	..	2¼ miles.
Right chimney of 2½-story house.....	72	21	..	1¼ miles.
Chimney in middle of large house.....	88	21	..	1½ miles.
Nail in blaze in persimmon tree (11 inches diameter).....	97	25	..	7.67 meters.
Nail in blaze in persimmon tree (9 inches diameter).....	192	56	..	2.60 meters.

References—Continued.

Nail in blaze in persimmon tree (10 inches diameter).....	236	32	.....	3.86 meters.
Main chimney of Key house.....	293	03	.....	2¼ miles.
Chimney on Maddox house.....	358	28	.....	3½ miles.

FACT.

General locality.—Eastern shore of Wicomico River on Mills Point on south side of mouth of Chaptico Bay. (See chart No. 26.)

Immediate locality.—Observed station is on a long point covered on the southern side with gum and cedar trees, about 10 feet above high-water mark, 23 yards from extreme end of top of bank, 6 yards north of edge of bank, and 8 yards southeast of edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Cobb Point Bar Light" (S. 7° 13' E.).....	0	00	00	.....	6½ miles.
Nail in blaze in cedar tree (7 inches diameter).....	5	07	..	.....	6.20 meters.
Nail in blaze in oak tree (28 inches diameter).....	56	16	..	.....	6.37 meters.
Chimney on ell end of Stoddard house.....	157	08	..	.....	1¾ miles.
Chimney on Key house.....	199	54	..	.....	2½ miles.
Near peak of roof of large house.....	274	25	..	.....	¼ mile.
Nail in blaze in cedar tree (6 inches diameter).....	301	45	..	.....	16.26 meters.
Near chimney of large house near shore.....	317	53	..	.....	¾ mile.
West end of peak of house on Chaptico Wharf.....	342	53	..	.....	¾ mile.

BOWMAN.

General locality.—Western shore of Wicomico River at northeast side of mouth of Bowmans Creek and 1½ miles west by south of Mills Point. (See chart No. 26.)

Immediate locality.—Observed station is surrounded by water bushes on point of land about 1½ feet above high water, 14 yards east of high-water mark, 16 yards north of extreme end of point, 20 yards northeast of side of point, 20 yards south of several cedar trees, and about 150 yards south of a house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"Sacred Heart Church Spire" (S. 62° 50' E.).....	0	00	00	.....	4½ miles.
Chimney on end of long house.....	10	37	..	.....	3¼ miles.
Chimney of Lyon house.....	13	56	..	.....	3¼ miles.
Nail in blaze in cedar tree (7 inches diameter).....	59	04	40	.....	8.88 meters.
Chimney on square house.....	76	25	..	.....	¼ mile.
Crane house.....	168	10	..	.....	2 miles.
Nail in blaze in cedar tree (6 inches diameter).....	216	10	00	.....	18.37 meters.
Nail in blaze in cedar tree (7 inches diameter).....	232	40	30	.....	17.58 meters.
Chimney on rear end of house.....	263	40	..	.....	½ mile.
Peak of roof between two chimneys.....	357	27	..	.....	2¼ miles.

EEDLING.

General locality.—Western shore of Wicomico River about 1¼ miles southwest of Mills Point and about 1 mile southeast of mouth of Bowmans Creek. (See chart No. 26.)

Immediate locality.—Observed station is in a shell-covered cultivated field, about 10 feet above high-water mark, 37 yards southwest of shell and gravel beach, 88 yards west-northwest of extreme end of point, and 79 yards north of a ditch in marsh. Cement monument marking reference station is 23.99 meters N. 89° 56' W. of observed station.

Marks.—Observed and reference stations are marked by the center point of the triangles on standard cement monuments.

References.—

	°	'	"	
"Fact" (S. 39° 15' W.).....	0	00	00	1¼ miles.
Nail in blaze in gum tree (20 inches diameter).....	2	07	50	26.06 meters.
Near peak of roof of house on Chaptico Wharf.....	42	05	..	1¾ miles.
Chimney outside near end of house on hill.....	44	24	..	2⅝ miles.
Nail in blaze in cedar tree (3 inches diameter).....	49	54	40	25.75 meters.
REFERENCE STATION.....	50	48	55	23.99 meters.
Chimney on right of ell of a house.....	60	12	..	2 miles.
Near peak of roof of Eedling house.....	265	55	..	¾ mile.
Nail in blaze in oak tree (24 inches diameter).....	331	27	40	33.99 meters.

FARR.

General locality.—Eastern shore of Wicomico River about 1¼ miles south-southeast of Mills Point and one-fourth mile north of the mouth of Manahowick Creek. (See chart No. 26.)

Immediate locality.—Observed station is about 10 feet above high-water mark, 5 yards east by south of edge of bank, 32 yards north-northwest of several pine trees at fish shanty near edge of bank, 22 yards south by east of other trees, and 300 yards west by north of a large house.

Marks.—Observed station is center point of triangle on standard cement monument buried 16 inches below surface of ground with nail in stub at surface.

References.—

	°	'	"	
"Cobb Point Bar Light" (S. 2° 35' E.).....	0	00	00	5¼ miles.
"Rock Point Catholic Church Cross".....	8	03	40	3¼ miles.
Chimney on left side of house.....	42	41	..	1¾ miles.
Left chimney of Crane house.....	113	40	..	4½ miles.
Left peak of house on Chaptico Wharf.....	153	08	..	½ mile.
Left chimney of house on Mills Point farm.....	168	34	..	1¼ miles.
Right chimney on Maddox house.....	242	28	..	2 miles.
Right corner of large house.....	292	33	..	¼ mile.
Near corner of fish shanty.....	338	27	..	23.69 meters.

GUST.

General locality.—Western shore of Wicomico River on Windmill Point about three-fourths mile north of the mouth of Hedneys Creek and opposite mouth of Manahowick Creek. (See chart No. 26.)

Immediate locality.—Observed station is on shell and gravel point, bordered by persimmon and cedar trees, about 2 feet above high-water mark, 12 yards northwest of shore, 16 yards south of shore, and 28 yards west-southwest of shore on extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fact" (N. 20° 09' E.).....	0	00	00	1½ miles.
Nail in blaze in persimmon tree (8 inches diameter).....	6	22	..	7.95 meters.
Near peak of roof of house on Chaptico Wharf.....	35	32	..	1¼ miles.
Chimney on left side of large house.....	58	18	..	1¾ miles.
Chimney on middle of Lyon house.....	101	24	..	1¾ miles.
Near peak of roof of house with two chimneys.....	171	43	..	⅝ mile.
Nail in blaze in cedar tree (4 inches diameter).....	204	14	00	5.90 meters.
Nail in blaze in cedar tree (10 inches diameter).....	301	03	10	16.18 meters.

LYON.

General locality.—Eastern shore of Wicomico River on a point about $\frac{1}{4}$ mile north of Bramleigh Creek and 2 miles north by east of Rock Point. (See chart No. 26.)

Immediate locality.—Observed station is on a point of land between the Lyon residence and edge of bank, 100 yards north of small pond which is fringed on river side with cedar trees, about 4 yards north of a bird house on a post, 19 yards east-northeast of most prominent point of bank, 15 yards east-southeast of side of bank, 16 yards north-northeast of another side, and 12 yards south-southwest of a fence.

Marks—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Weiss" (S. $25^{\circ} 47'$ E.).....	0	00	00	 $1\frac{1}{4}$ miles.
Nail in blaze in cedar post of bird house sup- port.....	51	15	20	 3.67 meters.
Nail in blaze in pear tree (6 inches diameter) ..	58	00	50	 11.74 meters.
Chimney of house.....	129	14	..	 $1\frac{5}{8}$ miles.
Left chimney of Crane house.....	148	52	..	 $5\frac{1}{4}$ miles.
Between two chimneys of large brick house..	159	59	..	 $3\frac{1}{2}$ miles.
Near peak of roof between two chimneys of large house.....	171	56	..	 $3\frac{3}{4}$ miles.
West end of peak of roof of house on Chaptico Wharf.....	186	23	..	 $1\frac{3}{4}$ miles.
Corner of fence.....	198	08	..	 14.15 meters.
Near corner of house.....	247	11	..	 22.01 meters.
Right corner of small house.....	295	38	..	 24.59 meters.
Nail in blaze in locust tree (4 inches diameter). 302	02	10	..	 8.82 meters.
Right corner of shed.....	336	36	..	 14.98 meters.

SACRED HEART CHURCH SPIRE (BUSHWOOD).

General locality.—Easterly side of Wicomico River on high land about $1\frac{1}{2}$ miles inland, north by east of Bushwood Wharf. (See chart No. 26.)

Immediate locality.—Observed station is steeple of Sacred Heart Church near Bushwood.

Marks.—Observed station is center of cross on steeple.

References.—None necessary.

HEDNEY.

General locality.—Western shore of Wicomico River on first point above mouth of Charleston Creek and about $1\frac{3}{4}$ miles northwest of White Point. (See chart No. 26.)

Immediate locality.—Observed station is about 25 feet above high-water mark, 16 yards west-southwest of edge of bank, 139 yards north of large tree at edge of bank, 85 yards north of oak tree at edge of bank, 155 yards east-northeast of gum tree 20 inches diameter on bank of a pond, and about $\frac{1}{8}$ mile east-southeast of a house among trees.

Marks.—Observed station is center point of triangle on standard cement monument with top buried 12 inches below the surface of the ground. Surface mark is nail in stub with top 5 inches above surface of ground.

References.—

ances.—	°	'	"	
"Sacred Heart Church Spire" (N. 86° 31' E.).	0	00	00	 4½ miles.
Near corner of nearest chimney of four on a large house on hill.....	7	11	..	 4½ miles.
Right chimney of a large house.....	13	03	..	 2 miles.
Middle of island at end of White Point Bar...	38	45	..	 1⅞ miles.
Nail in blaze in oak tree (48 inches diameter) ..	50	28	00	 73.16 meters.
Nail in blaze in walnut tree (36 inches diameter).....	84	52	30	 115.63 meters.
Middle of gum tree.....	147	46	30	 138.47 meters.

References—Continued.

	°	'	"	
Near peak of roof between two chimneys.....	239	48	..	¾ mile.
Near chimney on large house.....	312	19	..	1½ miles.
Chimney of Lyon house.....	352	40	..	1½ miles.

CHARLES.

General locality.—Western shore of Wicomico River on first point south of entrance to Charleston Creek, and 1¼ miles north of Rock Point. (See chart No. 26.)

Immediate locality.—Observed station is on a small marshy point about 6 inches above high-water mark and 18 yards east of pine woods on a bank 10 feet above high water. Cement monument marking reference station is 15.56 meters N. 57° 10' W. of observed station.

Marks.—Observed station is nail in stub with top 2 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Hard" (S. 17° 38' E.)	0	00	00	1¼ miles.
Nail in blaze in pine tree (10 inches diameter) ..	47	51	..	28.46 meters.
Nail in blaze in pine tree (12 inches diameter) ..	84	58	..	16.66 meters.
Nail in blaze in pine tree (7 inches diameter) ..	134	22	..	16.87 meters.
REFERENCE STATION.....	138	28	10	15.56 meters.
West chimney on two-story house.....	205	53	..	¾ miles.
"Sacred Heart Church Spire (Bushwood)" ..	268	03	50	2¾ miles.
West chimney on Garner house.....	293	51	..	1¾ miles.
West gable of house on Bushwood Wharf.....	300	07	..	2 miles.

WEISS.

General locality.—Eastern shore of Wicomico River on White Point, about 3 miles north by east of Cobb Point Bar Light. (See chart No. 26.)

Immediate locality.—Observed station is on a bluff near small cedar trees, about 8 feet above high-water mark, 13 yards north of and 27 yards south of edges of bluff and 52 yards east of extreme point.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cobb Point Bar Light" (S. 11° 43' W.)....	0	00	00	¾ miles.
Flagstaff on schoolhouse.....	40	41	20	1½ miles.
Nail in blaze in cedar tree (10 inches diameter).....	54	03	10	42.29 meters.
Left chimney on two-story house.....	155	26	..	¾ mile.
Nail in blaze in poplar tree (3 inches diameter).....	181	46	..	6.24 meters.
"Sacred Heart Church Spire"	216	56	30	1¾ miles.
West chimney of Garner house.....	260	27	..	¾ mile.
Nail in blaze in poplar tree (4 inches diameter).....	266	27	50	37.80 meters.
West gable of house on Bushwood Wharf.....	284	26	..	¾ mile.
Left chimney on two-story house.....	342	10	..	2¾ miles.

BLAKISTONE.

General locality.—Eastern shore of Wicomico River, about one-fourth mile southeast of Plowdens Wharf at Bushwood, and about 3 miles north-northeast of Cobb Point Bar Light. (See chart No. 26.)

Immediate locality.—Observed station is on second bluff southeast of Bushwood Wharf, 15 feet above high-water mark, 15 yards southeast of a large dogwood tree, about 6 yards northeast of edge of bluff, 3 yards southwest of rail fence, about 15 yards southwest of an ice house near orchard, and 5 to 10 yards south to east of several small cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Prec" (S. 18° 42' W.).....	0	00	00	2 miles.
"Rock Point Catholic Church Cross".....	51	28	30	2 miles.
Left peak of roof of wharf house.....	94	16	..	1½ miles.
Large tree.....	117	48	..	13.36 meters.
Chimney of Blakistone store.....	125	48	..	¼ mile.
Near peak of roof of Blakistone house.....	176	32	..	250 yards.
Point of cupola on Ranahan house.....	191	45	..	1¾ miles.
Near left corner of sill of ice house.....	233	15	..	14.15 meters.
Right lower corner.....	260	33	..	15.76 meters.
Near peak of roof.....	312	54	..	¼ mile.

HARD.

General locality.—Western shore of Wicomico River on point of land known as Rock Point about 2 miles north by west of Cobb Point Bar Light. (See chart No. 26.)

Immediate locality.—Observed station is on low point of land near several small cedar trees about 1 foot above high-water mark, 47 yards west of shore, 16 yards south of shore, 30 yards north of shore, about 80 yards northeast by north of Rock Point Wharf, and 170 yards northeast by east of Lancaster's store.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cobb Point Bar Light" (S. 10° 17' E.)....	0	00	00	2 miles.
Northeast gable of wharf house.....	41	07	..	80 yards.
"Rock Point Catholic Church Cross".....	70	16	20	¼ mile.
South chimney on Lancaster's store.....	88	53	..	170 yards.
Point of east gable on house.....	134	44	..	¼ mile.
"Sacred Heart Church Spire".....	239	04	20	3 miles.
Gable of house on wharf at Bushwood.....	256	00	..	1¾ miles.
West gable of house.....	293	06	..	2 miles.
West gable on one-story house.....	315	19	..	2¼ miles.
North chimney of two-story house.....	330	12	..	2½ miles.

ROCK POINT CATHOLIC CHURCH CROSS.

General locality.—Eastern shore of Wicomico River at Rock Point. (See chart No. 26.)

Immediate locality.—Observed station is in settlement called Rock Point. It is on the larger of two similar buildings, the smaller one being the schoolhouse.

Marks.—Observed station is center point of cross on Rock Point Catholic Church.

References.—None necessary.

PREC.

General locality.—Eastern shore of Wicomico River on Bluff Point about 2 miles north-northeast of Cobb Point Bar Light. (See chart No. 26.)

Immediate locality.—Observed station is about 10 feet above high-water mark, 34 yards southeast of nearest end of neck of Bluff Point, 29 yards south-southeast of shore, 16 yards northeast of shore, and 88 yards west by southwest of house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cobb Point Bar Light" (S. 28° 37' W.)....	0	00	00	2 miles.
Tangent of woods on Cobb Point.....	34	04	..	2 miles.
"Rock Point Catholic Church Cross".....	70	16	30	1½ miles.
Nail in blaze in locust tree (3 inches diameter)	116	14	40	20.64 meters.
Left chimney of Garner house.....	148	42	..	1¾ miles.

References—Continued.

	°	'	"	
Nail in blaze in left one of twin locust trees (12 inches diameter).....	153	38	20	30.36 meters.
"Sacred Heart Church Spire".....	172	15	10	2¾ miles.
Near chimney of Sherrer house.....	228	37	..	88 yards.
Nail in blaze in poplar tree (6 inches diameter).....	243	01	50	33.74 meters.
Nail in blaze in poplar tree (5 inches diameter).....	282	00	40	27.71 meters.
Left chimney of cottage.....	298	22	..	¾ mile.
Right chimney of Bailey house on St. Margarets Island.....	336	25	..	1½ miles.

CORNER.

General locality.—Western shore of Wicomico River on the eastern side of an island known as Cobb Point Neck about halfway between Cobb Point and the entrance to Neales Sound. (See chart No. 26.)

Immediate locality.—Observed station is in a cultivated field on a bluff bordered with pine trees about 15 feet above high-water mark, 3 yards west of a wire fence running along edge of bluff and 21 yards east-northeast of a wire fence which separates cornfield from pine woods.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cobb Point Bar Light" (S. 29° 39' E.)....	0	00	00	1¾ miles.
Nail in blaze in cedar tree (3 inches diameter).....	50	02	..	16.08 meters.
Nail in blaze in pine tree (8 inches diameter).....	111	43	..	21.41 meters.
Nail in blaze in pine tree (12 inches diameter).....	135	20	..	33.22 meters.
Middle chimney of house.....	177	07	..	¼ mile.
"Catholic Church Cross".....	217	16	10	⅔ mile.
Left chimney of house on St. Margarets Island.....	318	56	..	1½ miles.

ST. MARGARET 2.

General locality.—Northwestern side of Potomac River on the southwestern side of St. Margarets Island in the mouth of the Wicomico River about 1 mile northeast of Cobb Point Bar Light. (See chart No. 26.)

Immediate locality.—Observed station is on a bluff about 12 feet above high-water mark, 15 inches northeast of edge of bluff, 86 yards northwest of cow shed, 129 yards south-southwest of several houses, and 154 yards west-southwest of Bailey (large) house. Cement monument marking reference station is 79.19 meters N. 46° 26' E. of observed station and at corner of cow shed.

Marks.—Observed station is center of a stub in a 2¼-inch tile pipe set in cement with top flush with ground. Reference station is center point of triangle of standard cement monument.

References.—

	°	'	"	
"Cobb Point Bar Light" (S. 53° 22' W.)....	0	00	00	1 mile.
Tangent of Cobb Point.....	45	13	..	1½ miles.
"Rock Point Catholic Church Cross".....	83	42	50	1¾ miles.
Chimney on left of Garner new house.....	129	40	..	2¾ miles.
"Sacred Heart Church Spire".....	143	27	50	4 miles.
REFERENCE STATION.....	173	04	15	79.19 meters.
Left chimney of Bailey house.....	194	51	..	150 yards.
Nearest chimney of small house on Bullock Island.....	220	26	..	1 mile.
Left chimney of small house on St. Catherine Island.....	258	32	..	1¼ miles.

COBB POINT BAR LIGHT.

General locality.—Northerly side of Potomac River at mouth of Wicomico River on the southeastern extremity of Cobb Point Bar. (See chart No. 26.)

Immediate locality.—Observed station is on the end of Cobb Point Bar at the mouth of the Wicomico River.

Marks.—Observed station is center point of black lantern on screw pile structure known as "Cobb Point Bar Light."

References.—

	° ' "	
"Blakistone Island Light" (S. 61° 25' E.)...	0 00 00	5 miles.

RIVER SPRINGS CATHOLIC CHAPEL CROSS.

General locality.—Northern side of Potomac River inland about three-fourths mile north by west of River Springs. (See charts Nos. 25 and 26.)

Immediate locality.—Observed station is on building known as River Springs Catholic Chapel.

Marks.—Observed station is center of cross on River Springs Catholic Chapel.

References.—None necessary.

SOUND.

General locality.—Northern shore of St. Catherine Sound about 2¼ miles east by north of Cobb Point Bar Light and one-fourth mile east of Bullock Island. (See chart No. 26.)

Immediate locality.—Observed station is about 15 feet above high-water mark, 35 yards north of edge of bank, 2 yards east of wire fence, 65 yards east of edge of bank, 57 yards south of southeast corner of fence of house yard, and 63 yards south by west of telephone pole line which is on the same side of the road.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	° ' "	
"Cobb Point Bar Light" (S. 84° 53' W.)...	0 00 00	2¼ miles.
Right chimney of house on Bullock Island..	8 24 ..	½ mile.
Near end of small chimney on large house...	27 15 ..	1 mile.
Left corner post of fence.....	65 05 ..	Near.
Near corner of chimney of small house.....	86 25 ..	Near.
Near corner post of fence.....	100 58 ..	Near.
Right peak of roof of barn.....	115 20 ..	Near.
"River Springs Catholic Chapel Cross".....	148 31 10	1 mile.
Chimney of Blakistone store.....	189 16 ..	½ mile.
Near chimney of Bailey house.....	217 59 ..	½ mile.
Chimney on smaller house on St. Catherine Island.....	323 03 ..	¾ mile.

BAILEY.

General locality.—Northeastern shore of St. Catherine Sound, about three-fourths mile east by north of eastern end of St. Catherine Island and 1 mile north of the Potomac River. (See chart No. 26.)

Immediate locality.—Observed station is on shelly ground on Bailey property, about 5 feet above high-water mark, 10 yards northeast of high-water mark, 7 yards northeast of a wire fence, 35 yards south-southeast of corner of wire fence, 30 yards north-northwest of corner of wire and wooden fences, 25 yards north of Bailey house, and 40 yards west by south of corner of wooden fence.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	° ' "	
"Cobb Point Bar Light" (N. 88° 11' W.)...	0 00 00	2½ miles.
Nail in blaze in one of four cedar trees (3 inches diameter).....	13 29 ..	12.37 meters.
Nail in blaze in cedar tree (8 inches diameter)	44 59 ..	27.82 meters.
Corner of wire fence.....	46 29 ..	32.06 meters.
Chimney on house.....	90 38 ..	150 yards.
"River Springs Catholic Chapel Cross".....	113 06 00	1 mile.
Corner of wooden fence.....	175 52 ..	37.49 meters.

References—Continued.

	°	'	"	
Chimney of Bailey house	203	26	..	25 yards.
Junction of wire and wooden fences	254	35	..	26.22 meters.
Left chimney of house on Waterloo Point	277	43	..	$\frac{3}{4}$ mile.
Nail in blaze in first of six cedar trees	297	27	..	10.76 meters.
Right chimney of small house on St. Catherine Island	348	02	..	1 mile.

ST. CATHERINE.

General locality.—Southern shore of St. Catherine Sound, on the northern side of St. Catherine Island. (See chart No. 26.)

Immediate locality.—Observed station is about 12 feet above high-water mark, 86 yards south of edge of bank, 49 yards west of line of young cedar trees, 198 yards northeast of a lone mulberry tree 3 feet in diameter, and 207 yards southeast of small house among trees.

Marks.—Observed station is center point of triangle on standard cement monument with top 12 inches below the surface.

References.—

	°	'	"	
"Cobb Point Bar Light" (N. 81° $08'$ W.)	0	00	00	$1\frac{7}{8}$ miles.
Right side of right chimney on small house	13	04	..	207 yards.
Left chimney of large house on St. Margarets Island	34	42	..	$1\frac{3}{8}$ miles.
Right chimney of house on Bullock Island	66	01	..	$\frac{1}{2}$ mile.
Chimney of Blackistone house	117	39	..	$\frac{5}{8}$ mile.
"River Springs Catholic Chapel Cross"	129	17	40	$1\frac{5}{8}$ miles.
Left chimney of Bailey house	158	19	..	$\frac{7}{8}$ mile.
Right chimney of Young house on Waterloo Point	207	48	..	$\frac{7}{8}$ mile.

WATERLOO.

General locality.—Southeastern shore of St. Catherine Sound, about three-fourths mile east-southeast of St. Catherine Island and about one-fourth mile north of Potomac River. (See chart No. 26.)

Immediate locality.—Observed station is at top of rise in field, about 8 feet above high-water mark, 48 yards east by south of shore at a point where several mulberry trees stand, 43 yards south of large sugarberry tree, 19 yards south by east of wire-fence post, and 200 yards north of Young house on Waterloo Farm.

Marks.—Observed station is center point of triangle on standard cement monument, with top 12 inches below surface of ground.

References.—

	°	'	"	
"Sound" (N. 18° $41'$ W.)	0	00	00	1 mile.
Near end of peak of Blackistone barn	3	02	..	1 mile.
"Sacred Heart Church Spire (Bushwood)"	10	37	20	5 miles.
Peak of gable of Blackistone house at River Springs	21	54	..	$\frac{7}{8}$ mile.
Near peak of roof of Bailey house	31	01	..	$\frac{3}{4}$ mile.
Near peak of roof of Yates house	49	13	..	$\frac{1}{2}$ mile.
Near peak of roof of Quaid house	71	25	..	$\frac{1}{4}$ mile.
Near peak of house	92	31	..	$\frac{1}{2}$ mile.
Nail in blaze in apple tree (5 inches diameter)	111	20	30	34.78 meters.
Nail in blaze 8-inch branch on apple tree (14 inches diameter)	153	34	20	24.90 meters.
Nail in blaze in apple tree (6 inches diameter)	203	50	00	26.18 meters.
Near peak of roof of Young house	206	57	..	200 yards.
Left tangent of St. Catherine Island	300	21	..	$\frac{3}{4}$ mile.
Right chimney of roof of house on Bullock Island	337	19	..	$1\frac{3}{8}$ miles.
Near peak of roof of house	352	57	..	$1\frac{3}{4}$ miles.

BOUNDARIES OF OYSTER BARS.

EXPLANATION.

The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster beds of Maryland provides for the designation and employment by the Department of Commerce and Labor of such officers, experts, and other technically qualified persons "as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland." The oyster laws of Maryland provide that the Maryland Shell Fish Commissioners, with the aid of such persons as may be designated by the Government, shall proceed "to have laid out, surveyed, and designated on the said charts the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts." The oyster laws of Maryland also provide in another section that there shall "be made a true and accurate survey of the natural oyster beds, bars, and rocks * * * with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey."

Under the provisions of the laws quoted above the State of Maryland, in cooperation with the Department of Commerce and Labor, must define the boundaries of the natural oyster bars "as accurately as practicable" and also "with reference to fixed and permanent objects on the shore, giving courses and distances." The requirement of "as accurately as practicable" is easily fulfilled by definition of the location of the corners of the oyster bars by latitude and longitude. In fact, this method is probably the most satisfactory and accurate one that could be used for all purposes of legal definition or for relocation of the oyster-bar boundaries by competent engineers. Therefore the additional requirement of "giving courses and distances" is superfluous and is only fulfilled in the published definitions on account of the specific provisions of the law making it compulsory. This part of the description of boundaries has involved an immense amount of extra computations in order to prevent technical discrepancies between the latitude and longitude of a corner of an oyster bar and its distance and bearing from objects on shore of known latitude and longitude without adding anything to the accuracy and very little to the convenience in the practical use of the descriptions of the oyster-bar boundaries.

As provided by law, the boundaries of the oyster bars are all straight lines, but in the work already completed they have inclosed areas of all shapes from triangles to

complicated 14-sided figures and of all sizes from 4 acres to 7,548 acres. The sides have varied in length from 93 to 7,529 yards, and in some cases the corners of the boundaries have been practically at the triangulation stations from which they are located, while in other instances they were over 13,600 yards from the landmarks most available for the purpose of fixing their position.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made and the magnitude of the work, with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and great importance.

The boundaries of the oyster bars of Maryland, as established by the shell fish commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and the future.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in each county.

Title.—At the top of each tabular form is given the legal name of the oyster bar to be described and the one by which it is known and designated in the published oyster records and on the oyster charts. The adopted name of the oyster bar is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the commission; and when there was no local name in common use a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the oyster bar was located.

Underneath the name in parentheses is given the general locality of the oyster bar and the serial number of the Maryland Oyster Chart on which its legal boundaries are shown.¹

First column.—This column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar. Where the corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars, only the number of the corner of the oyster bar being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the commission as the primary technical definition of the location of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

Survey, and the points thus defined can be relocated from distant triangulation stations of the survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"¹ and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"² gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the shellfish commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars—one, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

(1) *Triangulation.*—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An

¹ The mean magnetic variation for St. Marys County was $5^{\circ} 25'$ west of north in 1910 and increasing at the rate of $4'$ yearly.

² Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

explanation of this class of work would be too long for a report of this sort, and those not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "Brooks Shallows" oyster bar, which is the first one described in this publication, and assume that "Corner No. 3" is to be examined as to its position. The angle between the two landmarks "Dwarf" and "Hallowing" as determined from right to left from the forward bearings from this corner is $54^{\circ} 50'$ and the angle between "Hallowing" and "Indian" is $77^{\circ} 10'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the

sextant to subtend the same angle obtained from the protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant then the other until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic location of a point is attained. In fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State fishery force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer can take compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,¹ and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks for which the bearings are published have been destroyed or washed away any landmarks whose positions are indicated on the charts can be used. This can be done by getting their bearings directly from the chart by parallel rulers or a protractor and then applying these new bearings in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fifth column of the tables opposite the "corner" in question. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point, but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

¹ The mean magnetic variation for St. Marys County is $5^{\circ} 25'$ west of north in 1910 and increasing at the rate of $4'$ yearly.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

BROOKS SHALLOWS.

(Upper Patuxent River—Chart No. 19.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
			° / '	° / '		
1	38 29 57.18	76 40 31.45	S. 86 50 E. N. 38 18 E. N. 20 33 W.	N. 86 49 W. S. 38 18 W. S. 20 33 E.	Yards. 1,171 1,512 916	Dwarf. Hallowing. Indian.
2	38 30 03.78	76 40 31.64	S. 76 15 E. N. 44 20 E. N. 26 29 W.	N. 76 15 W. S. 44 21 W. S. 26 29 E.	1,210 1,348 710	Dwarf. Hallowing. Indian.
3	38 30 04.02	76 40 24.36	S. 73 15 E. N. 38 05 E. N. 39 05 W.	N. 73 15 W. S. 38 06 W. S. 39 05 E.	1,025 1,215 808	Dwarf. Hallowing. Indian.
4	38 29 57.54	76 40 23.78	S. 85 27 E. N. 32 00 E. N. 31 45 W.	N. 85 27 W. S. 32 01 W. S. 31 46 E.	960 1,386 995	Dwarf. Hallowing. Indian.

SOTHORON.

(Upper Patuxent River—Chart No. 19.)

1	38 29 26.59	76 40 07.29	N. 89 19 E. N. 28 42 E. N. 56 12 W.	S. 89 20 W. S. 28 42 W. S. 56 13 E.	1,442 1,102 258	Buzz. Dwarf. Sothoron.
2	38 29 36.28	76 40 09.57	S. 39 58 W. S. 78 22 E. N. 42 39 E.	N. 39 58 E. N. 78 21 W. S. 42 39 W.	239 1,534 871	Sothoron. Buzz. Dwarf.
3	38 29 37.52	76 39 59.48	S. 74 05 E. N. 28 19 E. S. 61 51 W.	N. 74 05 W. S. 28 19 W. N. 61 51 E.	1,284 681 478	Buzz. Dwarf. Sothoron.
4	38 29 26.88	76 40 00.94	N. 89 40 E. N. 20 40 E. N. 70 45 W.	S. 89 40 W. S. 20 40 W. S. 70 45 E.	1,274 1,023 405	Buzz. Dwarf. Sothoron.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BROAD NECK (ST. MARYS COUNTY).

(Upper Patuxent River—Chart No. 19.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 27 36.14	76 39 10.54	N. 34 58 E. N. 28 35 W. S. 52 54 W.	S. 34 58 W. S. 28 35 E. N. 52 54 E.	1,137 1,200 626	Sheridan. Collins. Cremona.
2	38 27 57.42	76 39 27.00	S. 3 17 W. N. 78 51 E. N. 23 32 W.	N. 3 17 E. S. 78 51 W. S. 23 32 E.	1,097 1,109 454	Cremona. Sheridan. Collins.
3	38 28 00.34	76 39 09.64	N. 63 40 W. S. 23 40 W. N. 79 34 E.	S. 63 41 E. N. 23 40 E. S. 79 34 W.	715 1,304 639	Collins. Cremona. Sheridan.
Thence along county boundary as delineated on Chart No. 19 to corner No. 4.						
4	38 27 41.18	76 39 00.00	N. 26 03 E. S. 42 57 W. S. 54 49 W.	S. 26 03 W. S. 42 57 E. N. 54 49 E.	848 1,317 952	Sheridan. Collins. Cremona.

THOMAS (ST. MARYS COUNTY).

(Upper Patuxent River—Chart No. 19.)

1	38 26 47.41	76 38 21.12	N. 72 51 W. S. 17 35 E. N. 43 44 E.	S. 72 51 E. N. 17 34 W. S. 43 44 W.	635 1,839 2,218	Oppkit. Fight. Kitt.
2	38 27 41.18	76 39 00.00	N. 26 03 E. N. 42 57 W. S. 54 49 W.	S. 26 03 W. S. 42 57 E. N. 54 49 E.	848 1,317 952	Sheridan. Collins. Cremona.
Thence along county boundary as delineated on Chart No. 19 to corner No. 3.						
3	38 27 12.58	76 38 14.84	N. 61 07 E. N. 25 33 W. S. 49 29 W.	S. 61 07 W. S. 25 33 E. N. 49 29 E.	1,561 1,914 1,018	Kitt. Sheridan. Oppkit.

SANDGATES.

(Middle Patuxent River—Chart No. 19.)

1	38 25 01.66	76 36 45.53	S. 45 16 E. N. 41 54 E. N. 47 36 W.	N. 45 16 W. S. 41 55 W. S. 47 37 E.	675 2,924 2,688	Forr. Photo. Fight.
2	38 25 09.06	76 36 57.58	S. 47 48 E. N. 49 42 E. N. 40 49 W.	N. 47 48 W. S. 49 43 W. S. 40 50 E.	1,078 2,980 2,285	Forr. Photo. Fight.
3	38 25 28.46	76 36 50.40	S. 23 49 E. N. 58 30 E. N. 63 54 W.	N. 23 49 W. S. 58 30 W. S. 63 55 E.	1,507 2,437 2,067	Forr. Photo. Fight.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SANDGATES—Continued.

(Middle Patuxent River—Chart No. 19.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
4	38 25 47.34	76 37 23.27	N. 74 33 W. S. 36 18 E. N. 77 50 E.	S. 74 33 E. N. 36 18 W. S. 77 51 W.	1,021 2,500 3,022	Fight. Forr. Photo.
5	38 25 54.57	76 37 15.44	N. 88 38 W. S. 29 24 E. N. 81 52 E.	S. 88 39 E. N. 29 23 W. S. 81 53 W.	1,192 2,593 2,774	Fight. Forr. Photo.
6	38 25 30.21	76 36 37.39	S. 10 23 E. N. 55 03 E. N. 68 53 W.	N. 10 23 W. S. 55 04 W. S. 68 54 E.	1,461 2,119 2,360	Forr. Photo. Fight.

UPPER FORREST.

(Middle Patuxent River—Chart No. 19.)

1	38 24 45.22	76 36 02.57	N. 59 04 E. N. 16 36 E. N. 83 08 W.	S. 59 05 W. S. 16 36 W. S. 83 08 E.	2,846 2,850 666	Slim. Photo. Forr.
2	38 24 48.95	76 36 11.88	N. 63 34 E. N. 22 09 E. S. 83 38 W.	S. 63 35 W. S. 22 10 W. N. 83 37 E.	3,002 2,813 417	Slim. Photo. Forr.
3	38 25 15.09	76 36 13.64	S. 21 35 W. N. 80 33 E. N. 32 43 E.	N. 21 35 E. S. 80 34 W. S. 32 43 W.	997 2,773 2,048	Forr. Slim. Photo.
4	38 25 09.14	76 36 05.04	S. 39 18 W. N. 74 59 E. N. 24 33 E.	N. 39 18 E. S. 75 00 W. S. 24 34 W.	939 2,595 2,116	Forr. Slim. Photo.

LOWER FORREST.

(Middle Patuxent River—Chart No. 19.)

1	38 24 22.16	76 35 33.18	S. 32 41 E. N. 36 34 E. N. 59 15 W.	N. 32 41 W. S. 36 35 W. S. 59 15 E.	888 2,789 1,676	Cole. Slim. Forr.
2	38 24 30.16	76 35 41.64	S. 34 42 E. N. 43 45 E. N. 64 13 W.	N. 34 41 W. S. 43 45 W. S. 64 13 E.	1,237 2,727 1,351	Sole. Slim. Forr.
3	38 24 36.20	76 35 34.00	S. 22 20 E. N. 43 37 E. N. 74 52 W.	N. 22 20 W. S. 43 38 W. S. 74 53 E.	1,320 2,440 1,470	Cole. Slim. Forr.
4	38 24 28.25	76 35 26.00	S. 16 53 E. N. 35 56 E. N. 68 13 W.	N. 16 53 W. S. 35 56 W. S. 68 14 E.	996 2,507 1,756	Cole. Slim. Forr.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GATTON.

(Middle Patuxent River—Chart No. 19.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 23 26.43	76 32 54.98	S. 48 28 W. S. 51 46 E. N. 29 03 E.	N. 48 28 E. N. 51 46 W. S. 29 04 W.	442 1,404 2,263	Hutchins. Bars. Island.
2	38 23 33.36	76 34 06.58	S. 71 28 E. N. 59 48 E. N. 63 43 W.	N. 71 27 W. S. 59 50 W. S. 63 43 E.	1,656 3,469 2,029	Hutchins. Island. Cole.
3	38 23 45.80	76 34 06.30	S. 58 49 E. N. 66 06 E. N. 75 18 W.	N. 58 48 W. S. 66 07 W. S. 75 19 E.	1,826 3,272 1,888	Hutchins. Island. Cole.
4	38 23 46.90	76 33 39.02	S. 40 28 E. N. 60 24 E. N. 80 10 W.	N. 40 28 W. S. 60 25 W. S. 80 11 E.	1,292 2,607 2,587	Hutchins. Island. Cole.
5	38 23 30.68	76 32 54.26	S. 38 43 W. S. 46 57 E. N. 30 20 E.	N. 38 43 E. N. 46 57 W. S. 30 29 W.	559 1,483 2,129	Hutchins. Bars. Island.

CAPTAIN POINT.

(Middle Patuxent River—Chart No. 19.)

1	38 23 01.40	76 32 04.82	S. 83 52 W. S. 40 32 E. N. 71 04 E.	N. 83 51 E. N. 40 31 W. S. 71 04 W.	230 2,137 2,509	Bars. Stock. Wheat.
2	38 23 06.18	76 32 11.74	N. 75 13 W. S. 13 39 W. N. 75 34 E.	S. 75 13 E. N. 13 39 E. S. 75 35 W.	1,529 191 2,699	Hutchins. Bars. Wheat.
3	38 23 10.34	76 32 06.79	N. 81 11 W. S. 28 26 W. N. 77 54 E.	S. 81 11 E. N. 28 26 E. S. 77 55 W.	1,628 371 2,538	Hutchins. Bars. Wheat
4	38 23 05.78	76 32 00.25	S. 63 48 W. S. 35 34 E. N. 73 27 E.	N. 63 48 E. N. 35 34 W. S. 73 28 W.	390 2,178 2,408	Bars. Stock. Wheat.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PETERSON (ST. MARYS COUNTY).

(Middle Patuxent River—Charts Nos. 19 and 20.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 23 12.22	76 31 11.86	S. 76 36 W.	N. 76 35 E.	1,669	Bars.
			S. 0 30 W.	N. 0 30 E.	1,989	Stock.
			N. 65 25 E.	S. 65 24 W.	1,126	Wheat.
2	38 23 33.08	76 32 03.82	N. 8 23 W.	S. 8 24 E.	1,773	Island.
			S. 72 59 W.	N. 72 58 E.	1,766	Hutchins.
			S. 13 09 W.	N. 13 09 E.	1,122	Bars.
3	38 23 44.44	76 31 50.08	N. 30 01 E.	S. 30 01 W.	1,818	Peak.
			N. 24 27 W.	S. 24 27 E.	1,506	Island.
			S. 22 47 W.	N. 22 47 E.	1,601	Bars.

Thence along county boundary as delineated on charts Nos. 19 and 20 to corner No. 1.

NEALE.

(Lower Patuxent River—Charts Nos. 19 and 20.)

1	38 22 12.38	76 31 08.24	S. 48 38 E.	N. 48 38 W.	1,733	Briscoe.
			N. 65 21 E.	S. 65 22 W.	2,803	Lend.
			N. 75 51 W.	S. 75 51 E.	117	Stock.
2	38 22 36.50	76 31 41.34	S. 43 37 E.	N. 43 37 W.	1,084	Stock.
			N. 47 11 W.	S. 47 11 E.	2,463	Wheat.
			N. 46 16 W.	S. 46 17 E.	1,179	Bars.
3	38 22 59.46	76 31 09.58	N. 47 03 W.	S. 47 03 E.	1,317	Wheat.
			N. 88 37 W.	S. 88 38 E.	1,695	Bars.
			S. 2 52 W.	N. 2 52 E.	1,561	Stock.
4	38 22 25.60	76 30 51.72	N. 41 45 E.	S. 41 46 W.	2,236	Sollers.
			N. 13 30 E.	S. 13 30 W.	2,099	Wheat.
			S. 52 56 W.	N. 52 56 E.	692	Stock.

MEARS (ST. MARYS COUNTY).

(Lower Patuxent River—Charts Nos. 19 and 20.)

1	38 22 13.42	76 30 03.46	N. 36 08 E.	S. 36 09 W.	1,403	Lend.
			S. 89 59 W.	N. 89 59 E.	1,833	Stock.
			S. 19 34 W.	N. 19 34 E.	1,251	Briscoe.
2	38 22 16.00	76 30 23.80	S. 85 52 W.	N. 85 52 E.	1,297	Stock.
			S. 5 27 E.	N. 5 27 W.	1,273	Briscoe.
			N. 52 35 E.	S. 52 35 W.	1,722	Lend.
3	38 22 48.14	76 30 44.62	N. 88 53 E.	S. 88 54 W.	1,920	Lend.
			N. 55 05 E.	S. 55 05 W.	1,587	Sollers.
			N. 13 16 E.	S. 13 16 W.	1,313	Wheat.

Thence along county boundary as delineated on charts Nos. 19 and 20 to corner No. 1.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HALF PONE.

(Lower Patuxent River—Chart No. 20.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 21 47.27	76 30 37.34	S. 58 08 E. N. 40 36 E. N. 46 51 W.	N. 58 08 W. S. 40 36 W. S. 46 52 E.	565 2,654 1,280	Briscoe. Lend. Stock.
2	38 21 56.15	76 30 49.42	S. 53 16 E. N. 50 02 E. N. 46 48 W.	N. 53 15 W. S. 50 03 W. S. 46 48 E.	1,000 2,672 841	Briscoe. Lend. Stock.
3	38 22 08.82	76 30 33.26	S. 19 57 E. N. 51 29 E. N. 81 53 W.	N. 19 57 W. S. 51 29 W. S. 81 53 E.	1,091 2,069 1,053	Briscoe. Lend. Stock.
4	38 21 53.69	76 30 24.36	S. 14 47 E. N. 37 33 E. N. 62 44 W.	N. 14 47 W. S. 37 33 W. S. 62 45 E.	533 2,268 1,438	Briscoe. Lend. Stock.

HAWKS NEST.

(Lower Patuxent River—Chart No. 20.)

1	38 20 00.53	76 29 19.14	N. 68 41 W. S. 7 40 W. S. 60 27 E.	S. 68 41 E. N. 7 40 E. N. 60 27 W.	385 1,375 041	Mill. Cable. Bur.
2	38 20 11.78	76 29 35.80	S. 15 34 E. S. 55 11 E. N. 71 35 E.	N. 15 34 W. N. 55 11 W. S. 71 36 W.	248 1,217 2,194	Mill. Bur. Ton.
3	38 20 25.60	76 29 44.06	S. 23 16 E. N. 84 23 E. N. 45 52 E.	N. 23 16 W. S. 84 23 W. S. 45 53 W.	768 2,312 2,289	Mill. Ton. Hellen.
4	38 20 45.56	76 29 42.62	S. 10 53 E. N. 60 07 E. N. 54 56 W.	N. 10 53 W. S. 60 08 W. S. 54 56 E.	1,403 1,855 360	Mill. Hellen. Nat.
5	38 21 15.90	76 29 58.00	S. 7 37 E. S. 87 08 E. N. 36 37 W.	N. 7 37 W. N. 87 07 W. S. 36 37 E.	821 2,020 945	Nat. Hellen. Briscoe.
6	38 21 18.88	76 29 48.21	S. 9 26 W. S. 83 32 E. N. 51 22 W.	N. 9 26 E. N. 83 31 W. S. 51 22 E.	923 1,768 1,054	Nat. Hellen. Briscoe.
7	38 20 35.88	76 29 09.36	S. 30 30 W. S. 85 02 E. N. 30 06 E.	N. 30 30 E. N. 85 01 W. S. 30 07 W.	1,218 1,384 1,446	Mill. Ton. Hellen.
8	38 20 09.04	76 29 12.27	S. 74 48 W. S. 31 52 E. N. 61 41 E.	N. 74 48 E. N. 31 52 W. S. 61 41 W.	561 710 1,655	Mill. Bur. Ton.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BOB WISE.

(Lower Patuxent River—Chart No. 20.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / //	° / //	° /	° /	Yards.	
1	38 19 24.58	76 29 16.71	S. 81 02 E. N. 28 48 E. S. 58 47 W.	N. 81 01 W. S. 28 48 W. N. 58 47 E.	1,208 1,022 290	Town. Bur. Cable.
2	38 19 30.38	76 29 26.83	S. 3 26 E. S. 75 15 E. N. 47 23 E.	N. 3 26 W. N. 75 15 W. S. 47 23 W.	347 1,512 1,034	Cable. Town. Bur.
3	38 19 57.28	76 29 24.58	N. 40 38 W. S. 01 47 W. S. 73 37 E.	S. 40 38 E. N. 01 47 E. N. 73 37 W.	329 1,254 732	Mill. Cable. Bur.
4	38 19 52.74	76 29 15.14	N. 49 06 W. S. 14 48 W. S. 83 16 E.	S. 49 06 E. N. 14 48 E. N. 83 16 W.	614 1,137 454	Mill. Cable. Bur.
Thence along county boundary as delineated on Chart No. 20 to corner No. 5.						
5	38 19 32.82	76 29 15.02	S. 34 21 W. S. 67 53 E. N. 35 55 E.	N. 34 21 E. N. 67 53 W. S. 35 55 W.	518 1,240 763	Cable. Town. Bur.

SPENCERS.

(Lower Patuxent River—Chart No. 20.)

1	38 19 22.55	76 28 37.04	N. 30 11 W. S. 38 16 W. S. 49 15 E.	S. 30 11 E. N. 38 16 E. N. 49 15 W.	1,115 413 185	Bur. Crane. Town.
2	38 19 24.58	76 29 16.71	S. 81 02 E. N. 28 48 E. S. 58 47 W.	N. 81 01 W. S. 28 48 W. N. 58 47 E.	1,208 1,022 290	Town. Bur. Cable.
3	38 19 32.82	76 29 15.02	S. 34 21 W. S. 67 53 E. N. 35 55 E.	N. 34 21 E. N. 67 53 W. S. 35 55 W.	518 1,240 763	Cable. Town. Bur.
Thence along county boundary as delineated on Chart No. 20 to corner No. 4.						
4	38 19 31.80	76 28 19.14	N. 21 38 E. N. 57 48 W. S. 37 50 W.	S. 21 38 W. S. 57 48 E. N. 37 50 E.	775 1,225 547	New. Bur. Town.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

TOWN CREEK.

(Lower Patuxent River—Chart No. 20.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 48.66	76 28 30.82	N. 79 12 E.	S. 79 12 W.	1,800	Sand. Methodist Church. Episcopal
			N. 50 32 E.	S. 50 32 W.	1,845	
			N. 27 14 W.	S. 27 14 E.	921	
2	38 18 54.47	76 28 38.58	N. 85 36 E.	S. 85 37 W.	2,069	Sand. Methodist Church. Episcopal
			N. 59 04 E.	S. 59 05 W.	1,901	
			N. 19 03 W.	S. 19 03 E.	658	
3	38 19 12.97	76 28 30.02	N. 75 52 E.	S. 75 52 W.	1,447	Methodist Church. Episcopal
			N. 12 59 W.	S. 12 59 E.	208	
			S. 89 50 W.	N. 89 49 E.	442	
4	38 19 10.86	76 28 22.58	N. 70 36 E.	S. 70 37 W.	1,278	Methodist Church. Episcopal
			N. 41 45 W.	S. 41 45 E.	367	
			N. 83 47 W.	S. 83 47 E.	644	

GOODWIN.

(Lower Patuxent River—Chart No. 20.)

1	38 18 28.75	76 28 06.02	S. 8 19 E.	N. 8 19 W.	417	Ben.
			N. 49 26 E.	S. 49 26 W.	1,577	Sand.
			N. 22 00 W.	S. 22 00 E.	1,827	Town.
2	38 18 34.80	76 28 10.62	S. 16 30 E.	N. 16 30 W.	643	Ben.
			N. 58 06 E.	S. 58 07 W.	1,555	Sand.
			N. 20 40 W.	S. 20 40 E.	1,592	Town.
3	38 18 37.12	76 28 05.38	S. 3 34 E.	N. 3 34 W.	606	Ben.
			N. 57 49 E.	S. 57 49 W.	1,395	Sand.
			N. 26 25 W.	S. 26 25 E.	1,577	Town.
4	38 18 30.80	76 28 01.60	S. 6 46 W.	N. 6 46 E.	484	Ben.
			S. 48 29 E.	N. 48 29 W.	1,442	Sand.
			N. 26 16 W.	S. 26 16 E.	1,812	Town.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

LA GRANDE.

(Lower Patuxent River—Chart No. 20.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 17 35.18	76 27 17.84	S. 79 05 E. N. 1 40 W. N. 41 11 W.	N. 79 05 W. S. 1 40 E. S. 41 12 E.	723 2,834 1,853	Craddock. Sand. Ben.
2	38 18 13.71	76 27 48.34	S. 46 38 E. N. 25 24 E. N. 76 58 W.	N. 46 38 W. S. 25 25 W. S. 76 58 E.	2,092 1,696 420	Craddock. Sand. Ben.
3	38 18 20.36	76 27 39.18	S. 37 34 E. N. 20 19 E. S. 78 47 W.	N. 37 34 W. S. 20 20 W. N. 78 46 E.	2,094 1,395 665	Craddock. Sand. Ben.
4	38 18 00.96	76 27 14.07	N. 5 19 W. N. 68 19 W. S. 31 13 E.	S. 5 19 E. S. 68 20 E. N. 31 13 W.	1,975 1,421 1,177	Sand. Ben. Craddock.
5	38 17 35.26	76 27 07.14	S. 72 09 E. N. 7 23 W. N. 47 14 W.	N. 72 09 W. S. 7 23 E. S. 47 14 E.	448 2,852 2,048	Craddock. Sand. Ben.

MILLSTONE.

(Lower Patuxent River—Chart No. 20.)

1	38 17 32.82	76 26 07.63	N. 22 47 E. N. 33 47 W. S. 87 10 W.	S. 22 47 W. S. 33 48 E. N. 87 09 E.	3,538 3,593 1,157	Drum Point Light. Sand. Craddock.
2	38 17 40.10	76 26 47.16	N. 18 36 W. N. 58 53 W. S. 19 08 W.	S. 18 37 E. S. 58 54 E. N. 19 08 E.	2,813 2,377 322	Sand. Ben. Craddock.
3	38 18 14.62	76 26 27.79	N. 45 43 E. N. 43 14 W. S. 22 55 W.	S. 45 44 W. S. 43 15 E. N. 22 55 E.	2,654 2,061 1,592	Drum Point Light. Sand. Craddock.
4	38 17 52.60	76 25 45.94	N. 17 00 E. N. 48 21 W. S. 67 19 W.	S. 17 00 W. S. 48 22 E. N. 67 18 E.	2,714 3,377 1,878	Drum Point Light. Sand. Craddock.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

DEEP POINT MUD.

(Lower Patuxent River—Chart No. 20.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 17 52.60	76 25 45.94	N. 17 00 E. N. 48 21 W. S. 67 19 W.	S. 17 00 W. S. 48 22 E. N. 67 18 E.	2,714 3,377 1,878	Drum Point Light. Sand. Craddock.
2	38 18 14.62	76 26 27.79	N. 45 43 E. N. 43 14 W. S. 22 55 W.	S. 45 44 W. S. 43 15 E. N. 22 55 E.	2,654 2,061 1,592	Drum Point Light. Sand. Craddock.
3	38 18 31.18	76 25 30.58	S. 58 20 E. N. 16 35 E. N. 72 10 W.	N. 58 20 W. S. 16 35 W. S. 72 11 E.	954 1,351 3,080	Carroll 2. Drum Point Light. Sand.
4	38 18 11.80	76 25 24.99	N. 6 55 E. N. 62 39 W. S. 59 04 W.	S. 6 56 W. S. 62 40 E. N. 59 03 E.	1,965 3,470 2,662	Drum Point Light. Sand. Craddock.

CARROLL MUDS (ST. MARYS COUNTY).

(Lower Patuxent River—Chart No. 20.)

1	38 18 16.38	76 24 44.61	N. 61 07 E. N. 24 59 W. S. 89 49 W.	S. 61 07 W. S. 24 59 E. N. 89 49 E.	1,362 1,978 410	Hog 2. Drum Point Light. Carroll 2.
2	38 18 17.00	76 25 04.64	S. 79 40 E. N. 69 46 E. N. 9 43 W.	N. 79 40 W. S. 69 47 W. S. 9 43 E.	124 1,842 1,799	Carroll 2. Hog 2. Drum Point Light.
3	38 18 45.42	76 25 04.36	S. 6 40 E. S. 79 23 E. N. 20 54 W.	N. 6 40 W. N. 79 23 W. S. 20 55 E.	988 1,746 874	Carroll 2. Hog 2. Drum Point Light.
Thence along county boundary as delineated on Chart No. 20 to corner No. 4.						
4	38 19 03.80	76 24 17.62	N. 82 51 W. S. 35 10 W. S. 26 46 E.	S. 82 52 E. N. 35 09 E. N. 26 46 W.	1,565 1,958 1,054	Drum Point Light. Carroll 2. Hog 2.
5	38 18 48.16	76 24 02.46	N. 69 44 W. S. 54 59 W. S. 9 52 E.	S. 69 44 E. N. 54 58 E. N. 9 52 W.	2,084 1,867 420	Drum Point Light. Carroll 2. Hog 2.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HOG ISLAND.

(Entrance Patuxent River—Chart No. 20.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 18 20.00	76 23 08.90	S. 66 17 E. N. 1 16 W. N. 68 20 W.	N. 66 16 W. S. 1 16 E. S. 68 21 E.	1,865 6,747 1,453	Cedar Point Light. Pat. Hog 2.
2	38 18 36.00	76 23 57.04	N. 61 40 W. S. 86 47 W. N. 66 39 E.	S. 61 41 E. N. 86 47 E. S. 66 40 W.	2,385 72 3,252	Drum Point Light. Hog 2. Cedar Point Light.
3	38 19 17.14	76 23 47.02	S. 83 51 W. S. 13 40 W. S. 45 24 E.	N. 83 50 E. N. 13 40 E. N. 45 23 W.	2,380 1,432 3,820	Drum Point Light. Hog 2. Cedar Point Light.
4	38 18 46.92	76 22 31.22	N. 80 06 W. S. 81 00 W. S. 23 03 E.	S. 80 08 E. N. 80 59 E. N. 23 03 W.	4,445 2,381 1,801	Drum Point Light. Hog 2. Cedar Point Light.

CHINESE MUDS (ST. MARYS COUNTY).

(Entrance Patuxent River—Chart No. 20.)

1	38 18 35.08	76 22 01.52	N. 77 19 W. N. 89 31 W. S. 3 49 W.	S. 77 21 E. S. 89 32 E. N. 3 49 E.	5,297 3,142 1,261	Drum Point Light. Hog 2. Cedar Point Light.
2	38 18 46.92	76 22 31.22	N. 80 06 W. S. 81 00 W. S. 23 03 E.	S. 80 08 E. N. 80 59 E. N. 23 03 W.	4,445 2,381 1,801	Drum Point Light. Hog 2. Cedar Point Light.
3	38 19 17.14	76 23 47.02	S. 83 51 W. S. 13 40 W. S. 45 24 E.	N. 83 50 E. N. 13 40 E. N. 45 23 W.	2,380 1,432 3,820	Drum Point Light. Hog 2. Cedar Point Light.
Thence along county boundary as delineated in Chart No. 20 to corner No. 4.						
4	38 19 37.58	76 21 34.27	N. 32 48 W. S. 80 55 W. S. 13 30 W.	S. 32 49 E. N. 80 52 E. N. 13 30 E.	4,915 5,968 3,461	Pat. Drum Point Light. Cedar Point Light.
5	38 19 15.82	76 21 21.84	S. 88 03 W. S. 72 12 W. S. 23 23 W.	N. 88 01 E. N. 72 11 E. N. 23 23 E.	6,226 4,495 2,867	Drum Point Light. Hog 2. Cedar Point Light.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CEDAR POINT HOLLOW.

(Chesapeake Bay—Charts Nos. 20 and 21.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / //	° / //	° /	° /	Yards.	
1	38 13 46.44	76 21 49.06	N. 40 00 W. N. 72 51 W. S. 16 18 W.	S. 40 01 E. S. 72 52 E. N. 16 18 E.	5,298 2,878 3,217	Desert. Ford. Reed.
2	38 13 51.97	76 23 22.26	N. 77 05 E. N. 13 58 E. N. 13 28 W.	S. 77 10 W. S. 13 59 W. S. 13 29 E.	13,697 8,541 3,981	Hooper Island Light. Cedar Point Light. Desert.
3	38 15 05.58	76 23 47.04	N. 87 37 E. N. 25 03 E. N. 10 56 W.	S. 87 43 W. S. 25 04 W. S. 10 56 E.	14,021 6,410 1,415	Hooper Island Light. Cedar Point Light. Desert.
4	38 15 08.60	76 23 00.00	N. 11 12 W. N. 40 43 W. S. 24 13 E.	S. 11 12 E. S. 40 43 E. N. 24 13 W.	3,714 1,991 2,107	Cain. Desert. Ford.
5	38 16 40.66	76 23 00.00	N. 29 29 E. N. 53 13 W. S. 39 54 W.	S. 29 30 W. S. 53 13 E. N. 39 54 E.	2,987 900 2,368	Cedar Point Light. Cain. Desert.
6	38 16 40.70	76 22 37.82	N. 18 43 E. N. 07 41 W. S. 49 15 W.	S. 18 44 W. S. 07 42 E. N. 49 14 E.	2,744 1,416 2,784	Cedar Point Light. Cain. Desert.
7	38 17 27.33	76 22 35.42	N. 38 31 E. S. 53 02 W. S. 32 39 W.	S. 38 32 W. N. 53 01 E. N. 32 39 E.	1,311 1,720 4,027	Cedar Point Light. Cain. Desert.
8	38 17 52.90	76 22 02.70	N. 18 11 W. S. 49 48 W. S. 35 35 W.	S. 18 11 E. N. 49 47 E. N. 35 34 E.	168 2,939 5,228	Cedar Point Light. Cain. Desert.
9	38 15 41.30	76 20 48.18	N. 23 50 W. N. 58 57 W. N. 87 54 W.	S. 23 51 E. S. 58 59 E. S. 87 55 E.	5,031 4,930 5,027	Cedar Point Light. Cain. Desert.
10	38 14 33.94	76 20 51.08	N. 63 35 W. S. 80 04 W. S. 27 33 W.	S. 63 37 E. N. 80 02 E. N. 27 32 E.	5,524 4,359 5,302	Desert. Ford. Reed.

ROCKY BEACH.

(Chesapeake Bay—Chart No. 21.)

1	38 11 37.42	76 21 40.16	S. 25 26 E. N. 54 28 E. N. 42 06 W.	N. 25 26 W. S. 54 32 W. S. 42 06 E.	2,415 13,075 1,701	Point Agin. Hooper Island Light. Reed.
2	38 12 00.00	76 22 09.62	S. 31 46 E. N. 59 06 W. N. 35 26 W.	N. 31 45 W. S. 59 10 E. S. 35 26 E.	3,459 13,309 615	Point Agin. Hooper Island Light. Reed.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ROCKY BEACH—Continued.

(Chesapeake Bay—Chart No. 21.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
3	38 12 32.60	76 22 36.22	S. 30 26 E. N. 64 43 E. N. 24 09 W.	N. 30 25 W. S. 64 47 W. S. 24 10 E.	694 13,411 3,658	Reed. Hooper Island Light. Ford.
4	38 13 00.60	76 23 02.88	S. 34 31 E. N. 69 33 E. N. 18 13 W.	N. 34 31 W. S. 69 38 W. S. 18 14 E.	1,872 13,698 2,521	Reed. Hooper Island Light. Ford.
5	38 13 51.97	76 23 22.26	N. 77 05 E. N. 13 58 E. N. 13 28 W.	S. 77 10 W. S. 13 59 W. S. 13 29 E.	13,697 8,541 3,981	Hooper Island Light. Cedar Point Light. Desert.
6	38 13 46.44	76 21 49.06	N. 40 00 W. N. 72 51 W. S. 16 18 W.	S. 40 01 E. S. 72 52 E. N. 16 18 E.	5,298 2,878 3,217	Desert. Ford. Reed.
7	38 11 54.84	76 20 41.78	N. 44 33 W. N. 75 56 W. S. 10 35 W.	S. 44 35 E. S. 75 57 E. N. 10 35 E.	6,473 2,777 2,815	Ford. Reed. Point Agin.
8	38 11 49.94	76 20 57.82	N. 40 44 W. N. 69 40 W. S. 1 59 W.	S. 40 46 E. S. 69 41 E. N. 1 59 E.	6,311 2,418 2,604	Ford. Reed. Point Agin.

TENACRES.

(Chesapeake Bay—Chart No. 21.)

1	38 10 22.02	76 20 34.23	N. 37 16 W. N. 63 14 W. S. 42 43 E.	S. 37 17 E. S. 63 15 E. N. 42 41 W.	4,781 805 7,388	Reed. Point Agin. Point No Point Light.
2	38 11 37.42	76 21 40.16	S. 25 26 E. N. 54 28 E. N. 42 06 W.	N. 25 26 W. S. 54 32 W. S. 42 06 E.	2,415 13,075 1,701	Point Agin. Hooper Island Light. Reed.
3	38 11 49.94	76 20 57.82	N. 40 44 W. N. 69 40 W. S. 1 59 W.	S. 40 46 E. S. 69 41 E. N. 1 59 E.	6,311 2,418 2,604	Ford. Reed. Point Agin.
4	38 10 40.33	76 20 00.73	N. 49 50 W. S. 80 59 W. S. 34 16 E.	S. 49 52 E. N. 80 59 E. N. 34 15 W.	4,942 1,631 7,316	Reed. Point Agin. Point No Point Light.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

McKAY.

(Chesapeake Bay—Chart No. 21.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 09 29.82	76 19 38.52	N. 46 02 W. S. 11 53 E. S. 43 53 E.	S. 46 03 E. N. 11 53 W. N. 43 52 W.	3,058 2,022 5,090	Point Agin. Point No Point. Point No Point Light.
2	38 09 40.42	76 19 47.96	N. 47 51 W. S. 15 58 E. S. 43 11 E.	S. 47 51 E. N. 15 57 W. N. 43 10 W.	2,630 2,429 5,523	Point Agin. Point No Point. Point No Point Light.
3	38 09 52.20	76 19 33.80	N. 59 33 W. S. 6 04 E. S. 37 34 E.	S. 59 34 E. N. 6 04 W. N. 37 33 W.	2,699 2,748 5,581	Point Agin. Point No Point. Point No Point Light.
4	38 10 15.26	76 20 04.16	N. 68 46 W. S. 17 23 E. S. 39 00 E.	S. 68 47 E. N. 17 23 W. N. 38 59 W.	1,629 3,679 6,692	Point Agin. Point No Point. Point No Point Light.
5	38 10 07.20	76 20 21.06	N. 51 07 W. S. 25 34 E. S. 43 24 E.	S. 51 07 E. N. 25 33 W. N. 43 22 W.	1,372 3,590 6,784	Point Agin. Point No Point. Point No Point Light.
6	38 10 22.02	76 20 34.23	N. 37 16 W. N. 63 14 W. S. 42 43 E.	S. 37 17 E. S. 63 15 E. N. 42 41 W.	4,781 805 7,388	Reed. Point Agin. Point No Point Light.
7	38 10 40.33	76 20 00.73	N. 49 50 W. S. 80 59 W. S. 34 16 E.	S. 49 52 E. N. 80 59 E. N. 34 15 W.	4,942 1,631 7,316	Reed. Point Agin. Point No Point Light.
8	38 10 54.92	76 19 34.98	S. 71 59 W. S. 3 48 E. S. 27 43 E.	N. 71 58 E. N. 3 48 W. N. 27 41 W.	2,414 4,858 7,385	Point Agin. Point No Point. Point No Point Light.
9	38 10 00.00	76 18 31.62	N. 74 29 W. S. 24 30 W. S. 20 26 E.	S. 74 30 E. N. 24 29 E. N. 20 26 W.	4,133 3,292 5,001	Point Agin. Point No Point. Point No Point Light.

FISH HAWK.

(Chesapeake Bay—Charts Nos. 21 and 22.)

1	38 09 00.00	76 17 52.67	N. 58 03 W. S. 67 57 W. S. 14 54 E.	S. 58 05 E. N. 67 56 E. N. 14 54 W.	5,914 2,592 2,757	Point Agin. Point No Point. Point No Point Light.
2	38 09 00.00	76 19 12.72	N. 42 43 W. S. 15 33 W. S. 46 51 E.	S. 42 44 E. N. 15 33 E. N. 46 50 W.	4,257 1,009 3,894	Point Agin. Point No Point. Point No Point Light.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

FISH HAWK—Continued.

(Chesapeake Bay—Charts Nos. 21 and 22.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
3	38 09 29.82	76 19 38.52	N. 46 02 W.	S. 46 03 E.	3,058	Point Agin.
			S. 11 53 E.	N. 11 53 W.	2,022	Point No Point.
			S. 43 53 E.	N. 43 52 W.	5,090	Point No Point Light.
4	38 10 00.00	76 18 31.62	N. 74 29 W.	S. 74 30 E.	4,133	Point Agin.
			S. 24 30 W.	N. 24 29 E.	3,292	Point No Point.
			S. 20 26 E.	N. 20 26 W.	5,001	Point No Point Light.

ST. JEROME.

(Chesapeake Bay—Chart No. 22.)

1	38 07 12.60	76 19 54.22	N. 85 57 W.	S. 85 57 E.	501	St. Jerome.
			S. 1 38 E.	N. 1 38 W.	2,559	Point Look-in.
			N. 76 22 E.	S. 76 23 W.	4,061	Point No Point Light.
2	38 07 13.74	76 19 57.38	S. 89 35 W.	N. 89 35 E.	416	St. Jerome.
			S. 3 28 E.	N. 3 28 W.	2,593	Point Look-in.
			N. 77 09 E.	S. 77 11 W.	4,125	Point No Point Light.
3	38 07 32.58	76 19 44.54	S. 49 52 W.	N. 49 52 E.	991	St. Jerome.
			S. 3 13 W.	N. 3 17 E.	3,228	Point Look-in.
			N. 85 36 E.	S. 85 38 W.	3,700	Point No Point Light.
4	38 07 29.47	76 19 36.14	S. 61 28 W.	N. 61 27 E.	1,119	St. Jerome.
			S. 7 28 W.	N. 7 28 E.	3,145	Point Look-in.
			N. 83 36 E.	S. 83 37 W.	3,487	Point No Point Light.

SHAVING PILE.

(Chesapeake Bay—Chart No. 22.)

1	38 06 42.78	76 18 04.96	N. 27 50 E.	S. 27 50 W.	2,220	Point No Point Light.
			N. 73 01 W.	S. 73 02 E.	3,595	St. Jerome.
			S. 61 28 W.	N. 61 27 E.	3,232	Point Look-in.
2	38 07 22.24	76 18 14.40	N. 63 51 E.	S. 63 52 W.	1,435	Point No Point Light.
			S. 84 46 W.	N. 84 45 E.	3,173	St. Jerome.
			S. 41 59 W.	N. 41 58 E.	3,867	Point Look-in.
3	38 07 20.54	76 17 48.04	N. 40 21 E.	S. 40 21 W.	901	Point No Point Light.
			S. 86 34 W.	N. 86 32 E.	3,867	St. Jerome.
			S. 49 26 W.	N. 49 24 E.	4,331	Point Look-in.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BUTLER.

(Chesapeake Bay—Chart No. 22.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 06 07.50	76 19 49.96	S. 6 34 W. N. 50 34 E. N. 15 22 W.	N. 6 34 E. S. 50 35 W. S. 15 22 E.	357 4,904 2,313	Point Look-in. Point No Point Light. St. Jerome.
2	38 06 20.72	76 19 54.93	S. 6 32 E. N. 55 41 E. N. 15 04 W.	N. 6 32 W. S. 55 42 W. S. 15 04 E.	805 4,813 1,848	Point Look-in. Point No Point Light. St. Jerome.
3	38 06 33.18	76 20 07.42	S. 19 11 E. N. 61 59 E. N. 6 02 W.	N. 19 11 W. S. 62 00 W. S. 6 02 E.	1,292 4,869 1,372	Point Look-in. Point No Point Light. St. Jerome.
4	38 06 51.62	76 19 47.80	S. 3 03 W. N. 66 12 E. N. 42 04 W.	N. 3 03 E. S. 66 13 W. S. 42 04 E.	1,844 4,126 1,001	Point Look-in. Point No Point Light. St. Jerome.
5	38 06 52.60	76 19 04.02	N. 57 59 E. N. 68 52 W. S. 34 00 W.	S. 58 00 W. S. 68 52 E. N. 34 00 E.	3,077 1,968 2,262	Point No Point Light. St. Jerome. Point Look-in.
6	38 06 07.66	76 18 43.84	N. 33 22 E. N. 46 51 W. S. 78 44 W.	S. 33 21 W. S. 46 52 E. N. 78 43 E.	3,767 3,253 1,838	Point No Point Light. St. Jerome. Point Look-in.

POINT LOOK-IN.

(Chesapeake Bay—Chart No. 22.)

1	38 04 00.80	76 19 30.60	S. 12 42 E. N. 24 04 E. N. 8 05 W.	N. 12 42 W. S. 24 06 W. S. 8 05 E.	2,569 8,132 3,958	Potomac. Point No Point Light. Point Look-in.
2	38 04 39.18	76 19 31.62	S. 8 51 E. N. 28 37 E. N. 11 23 W.	N. 8 51 W. S. 28 38 W. S. 11 23 E.	3,847 6,984 2,683	Potomac. Point No Point Light. Point Look-in.
3	38 04 39.73	76 19 00.00	N. 22 16 E. N. 27 46 W. S. 3 46 W.	S. 22 17 W. S. 27 47 E. N. 3 46 E.	6,604 2,944 3,837	Point No Point Light. Point Look-in. Potomac.
4	38 04 53.98	76 19 00.00	N. 23 58 E. N. 32 51 W. S. 3 21 W.	S. 23 58 W. S. 32 52 E. N. 3 20 E.	6,162 2,528 4,308	Point No Point Light. Point Look-in. Potomac.
5	38 06 07.50	76 19 49.96	S. 6 34 W. N. 50 34 E. N. 15 22 W.	N. 6 34 E. S. 50 35 W. S. 15 22 E.	357 4,904 2,313	Point Look-in. Point No Point Light. St. Jerome.
6	38 06 07.66	76 18 43.84	N. 33 22 E. N. 46 51 W. S. 78 44 W.	S. 33 21 W. S. 46 52 E. N. 78 43 E.	3,767 3,253 1,838	Point No Point Light. St. Jerome. Point Look-in.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

POINT LOOK-IN—Continued.

(Chesapeake Bay—Chart No. 22.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
7	38 05 26.12	76 18 08.64	N. 14 00 E.	S. 14 01 W.	4,687	Point No Point Light.
			N. 69 11 W.	S. 69 12 E.	2,932	Point Look-in.
			S. 16 45 W.	N. 16 44 E.	5,623	Potomac.
8	38 04 10.30	76 17 41.22	N. 3 15 E.	S. 3 15 W.	7,116	Point No Point Light.
			N. 43 58 W.	S. 43 59 E.	5,000	Point Look-in.
			S. 39 45 W.	N. 39 44 E.	3,678	Potomac.

POINT LOOKOUT.

(Chesapeake Bay—Charts Nos. 22 and 23.)

1	38 02 25.55	76 19 02.00	N. 15 42 W.	S. 15 42 E.	732	Potomac.
			N. 10 30 W.	S. 10 31 E.	7,251	Point Look-in.
			S. 67 11 W.	N. 67 11 E.	528	Point Lookout Light.
2	38 02 50.62	76 19 01.74	N. 11 56 W.	S. 11 57 E.	6,424	Point Look-in.
			S. 55 20 W.	N. 55 20 E.	249	Potomac.
			S. 25 10 W.	N. 25 10 E.	1,160	Point Lookout Light.
3	38 02 59.01	76 19 04.18	N. 11 53 W.	S. 11 54 E.	6,132	Point Look-in.
			S. 18 13 W.	N. 18 13 E.	447	Potomac.
			S. 17 49 W.	N. 17 49 E.	1,400	Point Lookout Light.
4	38 03 06.80	76 19 01.27	N. 13 09 W.	S. 13 10 E.	5,893	Point Look-in.
			S. 17 33 W.	N. 17 33 E.	721	Potomac.
			S. 17 36 W.	N. 17 35 E.	1,674	Point Lookout Light.
5	38 04 00.80	76 19 30.60	S. 12 42 E.	N. 12 42 W.	2,569	Potomac.
			N. 24 04 E.	S. 24 06 W.	8,132	Point No Point Light.
			N. 8 05 W.	S. 8 05 E.	3,958	Point Look-in.
6	38 04 10.30	76 17 41.22	N. 3 15 E.	S. 3 15 W.	7,116	Point No Point Light.
			N. 43 58 W.	S. 43 59 E.	5,000	Point Look-in.
			S. 39 45 W.	N. 39 44 E.	3,678	Potomac.
7	38 02 50.40	76 17 57.36	N. 25 51 W.	S. 25 52 E.	6,990	Point Look-in.
			S. 86 00 W.	N. 86 00 E.	1,926	Potomac.
			S. 64 45 W.	N. 64 45 E.	2,444	Point Lookout Light.

OLD HARE.

(Smith Creek—Chart No. 24.)

1	38 05 50.98	76 24 07.54	S. 64 10 E.	N. 64 10 W.	1,019	Sig.
			N. 14 24 W.	S. 14 24 E.	1,389	Dago.
			N. 43 35 W.	S. 43 35 E.	802	Red Beacon.
2	38 06 10.48	76 24 58.62	S. 84 34 E.	N. 84 34 W.	813	Red Beacon.
			N. 55 46 E.	S. 55 46 W.	1,228	Dago.
			N. 64 24 W.	S. 64 24 E.	584	Day.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

OLD HARE—Continued.

(Chesapeake Bay—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
3	38 06 25.70	76 24 44.46	S. 36 09 E.	N. 36 09 W.	731	Red Beacon.
			N. 74 23 E.	S. 74 23 W.	663	Dago.
			N. 13 14 W.	S. 13 14 E.	542	Tab.
4	38 06 23.46	76 24 28.62	N. 40 32 E.	S. 40 32 W.	333	Dago.
			N. 42 11 W.	S. 42 11 E.	813	Tab.
			S. 1 01 E.	N. 1 01 W.	514	Red Beacon.

SMITH CREEK.

(Smith Creek—Chart No. 24.)

1	38 06 29.00	76 24 46.04	S. 34 04 E. N. 84 24 E. N. 11 06 W.	N. 34 04 W. S. 84 24 W. S. 11 06 E.	844 684 427	Red beacon. Dago. Tab.
2	38 06 41.37	76 24 49.11	S. 26 23 E. S. 65 19 E. N. 21 08 E.	N. 26 23 W. N. 65 18 W. S. 21 08 W.	1,249 839 750	Red beacon. Dago. Oak.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 07 02.36	76 24 37.22	N. 29 40 W. S. 80 51 W. S. 24 07 W.	S. 29 40 E. N. 80 51 E. N. 24 07 E.	516 47 776	Stung. Oak. Tab.
4	38 07 02.56	76 24 33.00	N. 39 47 W. S. 84 54 W. S. 30 59 W.	S. 39 48 E. N. 84 54 E. N. 30 59 E.	574 159 834	Stung. Oak. Tab.
5	38 06 55.20	76 24 38.39	N. 39 48 E. N. 3 39 W. S. 31 29 W.	S. 39 48 W. S. 3 39 E. N. 31 29 E.	525 234 547	Out. Oak. Tab.
6	38 06 55.02	76 24 30.62	N. 17 29 E. N. 42 45 W. S. 46 57 W.	S. 17 29 W. S. 42 45 E. N. 46 57 E.	429 327 674	Out. Oak. Tab.
7	38 07 02.61	76 24 29.58	S. 89 53 E. N. 33 25 E. S. 86 22 W.	N. 89 53 W. S. 33 25 W. N. 86 22 E.	273 184 251	In. Out. Oak.
8	38 07 03.06	76 24 22.21	N. 34 31 W. S. 86 01 W. S. 74 54 E.	S. 34 32 E. N. 86 01 E. N. 74 54 W.	168 447 79	Out. Oak. In.

BOUNDARIES OF NATURAL OYSTER BEDS—continued.

SMITH CREEK—Continued.

(Smith Creek—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
9	38 06 52.20	76 24 14.86	N. 69 27 E.	S. 69 27 W.	283	Pipe.
			N. 19 05 W.	S. 19 05 E.	365	In.
			N. 62 25 W.	S. 62 26 E.	724	Oak.
10	38 06 41.82	76 24 21.94	N. 45 17 E.	S. 45 17 W.	639	Pipe.
			N. 33 29 W.	S. 33 29 E.	821	Oak.
			S. 88 48 W.	N. 88 48 E.	724	Tab.

GRAVES.

(Smith Creek—Chart No. 24.)

1	38 07 02.36	76 24 37.22	N. 29 30 W. S. 80 51 W. S. 24 07 W.	S. 29 40 E. N. 80 51 E. N. 24 07 E.	516 47 776	Stung. Oak. Tab.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 07 10.60	76 24 45.69	S. 32 11 E. S. 77 40 E. N. 9 51 W.	N. 32 11 W. N. 77 40 W. S. 9 51 E.	337 543 173	Oak. Out. Stung.
3	38 07 15.65	76 24 46.80	S. 24 39 E. N. 55 23 E. N. 12 32 W.	N. 24 39 W. S. 55 23 W. S. 12 32 E.	501 344 537	Oak. Jutland. Flat.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 07 31.19	76 24 51.17	S. 12 32 E. N. 80 21 E. N. 27 44 E.	N. 12 32 W. S. 80 21 W. S. 27 44 W.	537 366 280	Stung. Flagpole. Ran 2.
5	38 07 02.56	76 24 33.00	N. 39 47 W. S. 84 54 W. S. 30 59 W.	S. 39 48 E. N. 84 54 E. N. 30 59 E.	574 159 834	Stung. Oak. Tab.

JUTLAND.

(Smith Creek—Chart No. 24.)

1	38 07 02.61	76 24 29.58	S. 89 53 E.	N. 89 53 W.	273	In.
			N. 33 25 E.	S. 33 25 W.	184	Out.
			S. 86 22 W.	N. 86 22 E.	251	Oak.
2	38 07 36.46	76 24 47.58	S. 28 17 W.	N. 28 17 E.	203	Flat.
			S. 66 19 E.	N. 66 19 W.	290	Flagpole.
			N. 26 17 E.	S. 26 17 W.	79	Ran 2.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

JUTLAND—Continued.

(Smiths Creek—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
3	38 07 38.54	76 24 46.28	S. 27 44 W.	N. 27 44 E.	280	Flat.
			S. 1 01 W.	N. 1 01 E.	772	Stung.
			S. 51 05 E.	N. 51 05 W.	296	Flagpole.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 07 31.02	76 24 39.58	N. 37 57 E.	S. 37 57 W.	86	Flagpole.
			N. 88 56 W.	S. 88 56 E.	309	Flat.
			S. 20 22 W.	N. 20 22 E.	552	Stung.
5	38 07 21.45	76 24 36.16	S. 55 23 W.	N. 55 23 E.	344	Stung.
			S. 6 30 W.	N. 6 30 E.	655	Oak.
			S. 29 51 E.	N. 29 51 W.	556	Out.
Thence from corner No. 5 along the mean low-water line of the shore to corner No. 6, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
6	38 07 03.06	76 24 22.21	N. 34 31 W.	S. 34 32 E.	168	Out.
			S. 86 01 W.	N. 86 01 E.	447	Oak.
			S. 74 54 E.	N. 74 54 W.	79	In.

DUNBAR.

(Smith Creek—Chart No. 24.)

1	38 07 12.94	76 23 47.00	S. 79 19 W.	N. 79 19 E.	1,051	Out.
			S. 56 42 W.	N. 56 42 E.	439	Drum.
			S. 10 21 W.	N. 10 21 E.	414	Enough.
2	38 07 19.58	76 23 48.60	S. 67 05 W.	N. 67 04 E.	1,075	Out.
			S. 34 53 W.	N. 34 53 E.	567	Drum.
			S. 2 51 W.	N. 2 51 E.	631	Enough.
3	38 07 20.33	76 23 46.36	S. 67 05 W.	N. 67 04 E.	1,141	Out.
			S. 38 04 W.	N. 38 03 E.	622	Drum.
			S. 7 55 W.	N. 7 54 E.	662	Enough.
4	38 07 14.34	76 23 42.30	S. 78 10 W.	N. 78 10 E.	1,183	Out.
			S. 59 39 W.	N. 59 39 E.	570	Drum.
			S. 23 42 W.	N. 23 42 E.	496	Enough.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SEDGE POINT.

(Lower St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 06 17.94	76 25 22.01	N. 89 24 E. N. 24 26 W. N. 89 37 W.	S. 89 24 W. S. 24 26 E. S. 89 38 E.	96 1,918 4,046	Day. Between. Labor.
2	38 06 18.02	76 25 37.60	S. 89 49 E. N. 12 16 W. N. 89 36 W.	N. 89 48 W. S. 12 16 E. S. 89 38 E.	512 1,785 3,631	Day. Between. Labor.
3	38 06 45.00	76 25 32.23	N. 32 01 W. S. 76 47 W. S. 22 01 E.	S. 32 01 E. N. 76 45 E. N. 22 01 W.	983 3,876 983	Between. Labor. Day.

MOUTH OF CREEK.

(Lower St. Marys River—Chart No. 24.)

1	38 06 18.60	76 27 16.76	S. 89 37 E. N. 52 43 E. N. 89 41 W.	N. 89 36 W. S. 52 44 W. S. 89 42 E.	3,154 2,844 988	Day. Between. Labor.
2	38 06 18.68	76 27 27.58	S. 89 36 E. N. 56 00 E. N. 89 47 W.	N. 89 35 W. S. 56 01 W. S. 89 47 E.	3,441 3,078 701	Day. Between. Labor.
3	38 06 50.60	76 28 04.10	S. 14 17 E. N. 79 38 E. N. 27 13 W.	N. 14 17 W. S. 79 39 W. S. 27 13 E.	1,105 3,582 1,006	Labor. Between. Smack.
4	38 07 11.80	76 28 10.76	N. 11 41 E. N. 57 31 W. S. 14 10 E.	S. 11 41 W. S. 57 32 E. N. 14 10 W.	970 336 1,840	Cherry. Smack. Labor.
5	38 07 04.99	76 27 49.02	N. 18 00 W. N. 64 35 W. S. 4 44 W.	S. 18 01 E. S. 64 35 E. N. 4 44 E.	1,242 953 1,564	Cherry. Smack. Labor.

CHICKEN COCK.

(Lower St. Marys River—Chart No. 24.)

1	38 06 38.30	76 25 55.46	S. 55 14 E. N. 5 16 E. S. 78 12 W.	N. 55 13 W. S. 5 16 W. N. 78 11 E.	1,202 1,064 3,223	Day. Between. Labor.
2	38 07 18.72	76 26 19.44	S. 67 37 E. N. 2 28 E. S. 51 13 W.	N. 67 36 W. S. 2 28 W. N. 51 12 E.	796 1,899 3,227	Between. Fort. Labor.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CHICKEN COCK—Continued.

(Lower St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
3	38 07 18.32	76 25 58.36	N. 14 05 E. S. 56 52 W. S. 31 07 E.	S. 14 05 W. N. 56 51 E. N. 31 07 W.	1,970 3,666 339	Fort. Labor. Between.
4	38 07 00.00	76 25 45.78	N. 26 02 W. S. 67 47 W. S. 27 14 E.	S. 26 02 E. N. 67 46 E. N. 27 14 W.	364 3,686 1,593	Between. Labor. Day.
5	38 06 39.94	76 25 45.01	N. 10 12 W. S. 78 15 W. S. 43 45 E.	S. 10 12 E. N. 78 14 E. N. 43 44 W.	1,023 3,507 1,026	Between. Labor. Day.

CHERRY.

(Lower St. Marys River—Chart No. 24.)

1	38 07 06.81	76 27 39.46	N. 88 02 E. N. 29 43 W. N. 72 38 W.	S. 88 04 W. S. 29 43 E. S. 72 39 E.	2,871 1,287 1,170	Between. Cherry. Smack.
2	38 07 23.00	76 28 15.13	N. 28 41 E. N. 77 16 W. S. 40 07 W.	S. 28 41 W. S. 77 17 E. N. 40 07 E.	651 1,413 258	Cherry. Adams. Smack.
3	38 07 39.96	76 28 03.41	N. 45 49 W. S. 31 53 W. S. 73 48 E.	S. 45 49 E. N. 31 53 E. N. 73 47 W.	1,344 906 3,652	Goose. Smack. Between.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 07 41.20	76 27 49.04	S. 46 43 W. S. 71 14 E. N. 65 13 E.	N. 46 43 E. N. 71 13 W. S. 65 14 W.	1,183 3,299 2,719	Smack. Between. Fort.
5	38 07 57.01	76 27 33.00	N. 73 25 E. N. 2 43 W. S. 43 47 W.	S. 73 26 W. S. 2 43 E. N. 43 47 E.	2,129 807 1,862	Fort. Pond. Smack.
6	38 07 29.02	76 27 19.00	N. 13 12 W. N. 72 41 W. S. 76 27 W.	S. 13 12 E. S. 72 41 E. N. 76 26 E.	1,800 1,239 1,709	Pond. Cherry. Smack.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MIDDLEGROUND LUMP.

(Lower St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 07 42.00	76 27 03.22	N. 48 46 E. N. 32 22 W. S. 87 33 W.	S. 48 17 W. S. 32 23 E. N. 87 32 E.	1,672 1,553 1,604	Fort. Pond. Cherry.
2	38 07 51.94	76 27 01.44	N. 57 04 E. N. 41 54 W. S. 76 15 W.	S. 57 04 W. S. 41 54 E. N. 76 14 E.	1,430 1,317 1,699	Fort. Pond. Cherry.
3	38 07 45.50	76 26 51.12	N. 42 56 E. N. 43 58 W. S. 84 28 W.	S. 42 56 W. S. 43 59 E. N. 84 27 E.	1,358 1,662 1,934	Fort. Pond. Cherry.

FORT.

(Lower St. Marys River—Chart No. 24.)

1	38 07 36.02	76 25 56.00	S. 7 12 E. N. 87 45 W. N. 22 26 W.	N. 7 12 W. S. 87 47 E. S. 22 26 E.	893 3,397 1,422	Between. Cherry. Fort.
2	38 08 00.00	76 26 52.52	S. 70 19 W. S. 43 39 E. N. 62 17 E.	N. 70 18 E. N. 43 39 W. S. 62 17 W.	2,005 2,342 1,087	Cherry. Between. Fort.
3	38 08 00.00	76 26 13.16	N. 9 36 W. N. 71 54 W. S. 18 36 E.	S. 9 36 E. S. 71 53 E. N. 18 36 W.	513 2,278 1,785	Fort. Pond. Between.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 07 37.98	76 25 54.82	N. 24 42 W. N. 88 53 W. S. 4 50 E.	S. 24 42 E. S. 88 54 E. N. 4 50 W.	1,373 3,426 956	Fort. Cherry. Between.

EDMUND.

(Lower St. Marys River—Chart No. 24.)

1	38 08 01.44	76 27 19.18	N. 74 41 E. N. 31 39 W. S. 58 25 W.	S. 74 41 W. S. 31 39 E. N. 58 25 E.	1,734 774 1,382	Fort. Pond. Cherry.
2	38 08 04.62	76 27 32.20	N. 80 10 E. N. 6 10 W. S. 45 00 W.	S. 80 11 W. S. 6 10 E. N. 44 59 E.	2,049 555 1,173	Fort. Pond. Cherry.
3	38 08 20.99	76 27 34.44	S. 48 42 E. S. 84 28 E. N. 52 55 E.	N. 48 41 W. N. 84 27 W. S. 52 55 W.	3,641 2,089 2,252	Between. Fort. Rod.
4	38 08 27.68	76 27 17.64	S. 63 15 W. S. 75 17 E. N. 50 00 E.	N. 63 14 E. N. 75 17 W. S. 50 00 W.	501 1,687 1,761	Pond. Fort. Rod.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

COAD.

(Lower St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 20.99	76 27 34.44	S. 48 42 E. S. 84 28 E. N. 52 55 E.	N. 48 41 W. N. 84 27 W. S. 52 55 W.	3,641 2,089 2,252	Between. Fort. Rod.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 08 42.80	76 27 53.82	S. 70 08 E. N. 74 54 E. N. 21 55 E.	N. 70 07 W. S. 74 55 W. S. 21 55 W.	2,759 2,395 1,201	Fort. Rod. Thompson.
3	38 08 49.42	76 27 36.62	S. 3 28 E. N. 77 49 E. N. 0 38 W.	N. 3 28 W. S. 77 50 W. S. 0 38 E.	960 1,897 891	Pond. Rod. Thompson.
4	38 08 27.68	76 27 17.64	S. 63 15 W. S. 75 17 E. N. 50 00 E.	N. 63 14 E. N. 75 17 W. S. 50 00 W.	501 1,687 1,761	Pond. Fort. Rod.

LANGLEY HOLLOW.

(Lower St. Marys River—Chart No. 24.)

1	38 08 08.80	76 26 19.10	N. 19 11 E. N. 78 25 W. S. 20 04 E.	S. 19 11 W. S. 78 26 E. N. 20 03 W.	221 2,048 2,120	Fort. Pond. Between.
2	38 08 09.34	76 26 26.18	N. 53 51 E. N. 77 48 W. S. 24 30 E.	S. 53 51 W. S. 77 49 E. N. 24 30 W.	324 1,860 2,209	Fort. Pond. Between.
3	38 08 41.22	76 26 27.54	N. 1 16 E. S. 60 03 W. S. 18 36 E.	S. 1 16 W. N. 69 02 E. N. 18 36 W.	676 1,907 933	Rod. Pond. Fort.
4	38 08 54.68	76 26 22.00	N. 30 52 W. S. 59 31 W. S. 6 24 E.	S. 30 52 E. N. 59 30 E. N. 6 24 W.	259 2,238 1,346	Rod. Pond. Fort.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 08 52.88	76 26 12.58	N. 53 37 W. S. 63 42 W. S. 4 31 W.	S. 53 37 E. N. 63 41 E. N. 4 31 E.	477 2,432 1,284	Rod. Pond. Fort.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PRIEST.

(Middle St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 41.22	76 26 27.54	N. 1 16 E. S. 69 03 W. S. 18 36 E.	S. 1 16 W. N. 69 02 E. N. 18 36 W.	676 1,907 933	Rod. Pond. Fort.
2	38 09 01.34	76 26 45.64	S. 89 41 E. N. 33 28 E. N. 70 18 W.	N. 89 41 W. S. 33 28 W. S. 70 19 E.	497 1,324 1,452	Rod. Inigoes. Thompson.
3	38 09 15.99	76 26 24.54	S. 7 27 W. N. 89 08 E. N. 15 23 E.	N. 7 27 E. S. 89 08 W. S. 15 24 W.	501 560 633	Rod. Raley. Inigoes.
4	38 09 09.62	76 26 16.40	N. 56 56 E. N. 3 27 W. S. 44 59 W.	S. 56 57 W. S. 3 27 E. N. 44 59 E.	409 827 398	Raley. Inigoes. Rod.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 08 54.68	76 26 22.00	N. 30 52 W. S. 59 31 W. S. 6 24 E.	S. 30 52 E. N. 59 30 E. N. 6 24 W.	259 2,238 1,346	Rod. Pond. Fort.

CARTHAGENA CREEK.

(Middle St. Marys River—Chart No. 24.)

1	38 09 01.40	76 27 46.92	S. 13 44 E. S. 89 52 E. N. 28 31 E.	N. 13 44 W. N. 89 52 W. S. 28 31 W.	1,400 2,128 554	Pond. Rod. Thompson.
2	38 09 11.20	76 27 53.06	S. 16 20 E. S. 81 40 E. N. 69 53 E.	N. 16 19 W. N. 81 39 W. S. 69 53 W.	1,764 2,316 456	Pond. Rod. Thompson.
3	38 09 15.85	76 27 36.98	S. 2 06 E. S. 75 13 E. N. 61 51 E.	N. 2 06 W. N. 75 12 W. S. 61 51 W.	1,851 1,928 1,188	Pond. Rod. Grind.
4	38 09 18.75	76 27 32.70	S. 49 22 W. S. 1 22 W. S. 71 23 E.	N. 49 22 E. N. 1 22 E. N. 71 22 W.	150 1,948 1,847	Thompson. Pond. Rod.
5	38 09 10.00	76 27 22.18	S. 78 38 E. N. 40 46 E. N. 63 25 W.	N. 78 38 W. S. 40 46 W. S. 63 25 E.	1,499 1,001 441	Rod. Grind. Thompson.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

THOMPSON CREEK.

(Middle St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 09 10.00	76 27 22.18	S. 78 38 E. N. 40 46 E. N. 63 25 W.	N. 78 38 W. S. 40 46 W. S. 63 25 E.	1,499 1,001 441	Rod. Grind. Thompson.
2	38 09 18.75	76 27 32.70	S. 49 22 W. S. 1 22 W. S. 71 23 E.	N. 49 22 E. N. 1 22 E. N. 71 22 W.	150 1,948 1,847	Thompson. Pond. Rod.
3	38 09 22.60	76 27 28.50	S. 44 46 W. S. 4 21 W. S. 66 17 E.	N. 44 46 E. N. 4 21 E. N. 66 17 W.	320 2,083 1,789	Thompson. Pond. Rod.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 09 30.77	76 27 00.40	S. 41 49 E. N. 51 59 E. N. 23 35 E.	N. 41 49 W. S. 51 59 W. S. 23 35 W.	1,335 94 1,307	Rod. Grind. Chan.
5	38 09 25.82	76 26 45.64	S. 31 01 E. N. 69 03 E. N. 54 53 W.	N. 31 01 W. S. 69 03 W. S. 54 53 E.	965 782 389	Rod. Inigoes. Grind.
6	38 09 18.86	76 26 55.87	S. 52 21 E. N. 62 52 E. N. 5 50 W.	N. 52 21 W. S. 62 52 W. S. 5 50 E.	972 1,126 461	Rod. Inigoes. Grind.

RALEYS SHORE.

(Entrance to St. Inigoes Creek—Chart No. 24.)

1	38 09 09.62	76 26 16.40	N. 56 56 E. N. 3 27 W. S. 44 59 W.	S. 56 57 W. S. 3 27 E. N. 44 59 E.	409 827 398	Raley. Inigoes. Rod.
2	38 09 15.99	76 26 24.54	S. 7 27 W. N. 89 08 E. N. 15 23 E.	N. 7 27 E. S. 89 08 W. S. 15 24 W.	501 560 633	Rod. Raley. Inigoes.
3	38 09 26.59	76 26 09.26	S. 23 39 E. N. 52 44 E. N. 43 26 W.	N. 23 39 W. S. 52 44 W. S. 43 26 E.	380 583 348	Raley. Cottage. Inigoes.
4	38 09 18.62	76 25 59.00	N. 47 12 E. N. 44 28 W. S. 56 18 W.	S. 47 12 W. S. 44 28 E. N. 56 18 E.	576 730 144	Church. Inigoes. Raley.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

KENNEDY.

(St. Inigoes Creek—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 09 26.00	76 26 04.72	S. 5 33 E. N. 42 36 E. N. 52 49 W.	N. 5 33 W. S. 42 36 W. S. 52 50 E.	330 506 451	Raley. Cottage. Inigoes.
2	38 09 35.26	76 26 11.26	S. 78 00 W. S. 17 49 E. N. 83 20 E.	N. 78 00 E. N. 17 49 W. S. 83 21 W.	189 673 520	Inigoes. Raley. Cottage.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 09 35.40	76 26 05.82	S. 82 22 W. S. 5 25 E. N. 81 30 E.	N. 82 22 E. N. 5 25 W. S. 81 30 W.	333 648 376	Inigoes. Raley. Cottage.
4	38 09 27.76	76 25 52.46	N. 71 29 E. N. 2 58 E. N. 72 43 W.	S. 71 29 W. S. 2 58 W. S. 72 43 E.	261 314 718	Church. Cottage. Inigoes.

JONES.

(St. Inigoes Creek—Chart No. 24.)

1	38 09 28.18	76 25 32.60	N. 0 55 W. N. 59 41 W. N. 76 06 W.	S. 0 55 E. S. 59 41 E. S. 76 07 E.	462 594 289	Grason. Cottage. Church.
2	38 09 32.96	76 25 39.88	N. 31 45 E. N. 66 33 W. S. 43 09 W.	S. 31 45 W. S. 66 33 E. N. 43 08 E.	354 347 126	Grason. Cottage. Church.
3	38 09 39.80	76 25 44.30	N. 76 55 E. N. 6 38 E. S. 65 14 W.	S. 76 55 W. S. 6 38 W. N. 65 14 E.	312 202 221	Grason. Dusky. Cottage.
4	38 09 42.40	76 25 36.74	N. 58 27 W. S. 65 51 W. S. 80 30 E.	S. 58 27 E. N. 65 51 E. N. 80 30 W.	209 441 104	Dusky. Cottage. Grason.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ST. INIGOES NORTH.

(St. Inigoes Creek—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 09 54.66	76 25 27.38	S. 37 57 E. N. 58 04 E. S. 87 54 W.	N. 37 57 W. S. 58 04 W. N. 87 54 E.	380 397 294	Smoke. Sleep. Rock.
2	38 10 03.16	76 25 29.70	S. 37 59 W. S. 26 47 E. S. 79 07 E.	N. 37 58 E. N. 26 47 W. N. 79 06 W.	377 656 406	Rock. Smoke. Sleep.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 10 00.89	76 25 14.72	S. 70 42 W. S. 11 24 W. S. 30 29 E.	N. 70 42 E. N. 11 24 E. N. 30 29 W.	668 521 445	Rock. Smoke. Chestnut.
4	38 09 58.16	76 25 12.42	N. 33 38 W. S. 21 25 W. S. 29 31 E.	S. 33 38 E. N. 21 25 E. N. 29 31 W.	110 449 335	Sleep. Smoke. Chestnut.

ST. INIGOES SOUTH.

(St. Inigoes Creek—Chart No. 24.)

1	38 09 45.02	76 25 22.00	N. 75 02 E. N. 54 17 W. S. 69 59 W.	S. 75 02 W. S. 54 17 E. N. 69 59 E.	94 538 308	Smoke. Rock. Grason.
2	38 09 50.82	76 25 24.36	S. 41 53 E. N. 37 05 E. N. 72 22 W.	N. 41 53 W. S. 37 05 W. S. 72 22 E.	229 425 393	Smoke. Sleep. Rock.
3	38 09 52.96	76 25 06.86	N. 38 28 W. S. 52 04 W. S. 8 12 E.	S. 38 28 E. N. 52 04 E. N. 8 12 W.	337 396 117	Sleep. Smoke. Chestnut.
4	38 09 49.51	76 25 06.23	N. 30 29 W. N. 79 14 W. S. 68 53 W.	S. 30 29 E. S. 79 14 E. N. 68 53 E.	445 873 352	Sleep. Rock. Smoke.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

COPPAGE.

(Middle St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 09 30.77	76 27 00.40	S. 41 49 E. N. 51 59 E. N. 23 35 E.	N. 41 49 W. S. 51 59 W. S. 23 35 W.	1,335 94 1,307	Rod. Grind. Chan.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 09 48.16	76 27 18.24	S. 46 04 E. N. 58 35 E. N. 42 42 W.	N. 46 04 W. S. 58 36 W. S. 42 43 E.	762 1,168 689	Grind. Chan. Coppage.
3	38 09 52.40	76 27 11.70	S. 29 09 E. N. 60 25 E. N. 60 28 W.	N. 29 09 W. S. 60 26 W. S. 60 28 E.	769 945 737	Grind. Chan. Coppage.
4	38 09 43.26	76 26 50.73	S. 26 49 W. S. 70 18 E. N. 18 53 E.	N. 26 49 E. N. 70 17 W. S. 18 53 W.	408 919 818	Grind. Inigoes. Chan.

COOPER CREEK.

(Middle St. Marys River—Chart No. 24.)

1	38 09 48.16	76 27 18.24	S. 46 04 E. N. 58 35 E. N. 42 42 W.	N. 46 04 W. S. 58 36 W. S. 42 43 E.	762 1,168 689	Grind. Chan. Coppage.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 10 06.00	76 27 35.60	S. 3 12 W. N. 89 43 E. N. 45 07 E.	N. 3 12 E. S. 89 44 W. S. 45 07 W.	95 1,459 1,171	Coppage. Chan. Bello.
3	38 10 06.98	76 27 31.40	S. 42 26 W. S. 88 54 E. N. 42 08 E.	N. 42 26 E. N. 88 53 W. S. 42 09 W.	174 1,348 1,071	Coppage. Chan. Bello.
4	38 09 58.54	76 27 25.58	N. 77 45 E. N. 27 35 E. N. 60 06 W.	S. 77 46 W. S. 27 35 W. S. 60 06 E.	1,220 1,216 314	Chan. Bello. Coppage.
5	38 09 52.40	76 27 11.70	S. 29 09 E. N. 60 25 E. N. 60 28 W.	N. 29 09 W. S. 60 26 W. S. 60 28 E.	769 945 737	Grind. Chan. Coppage.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ROSECROFT HOLLOW.

(Middle St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 09 29.88	76 26 25.10	N. 84 13 W. S. 51 20 E. N. 52 11 E.	S. 84 14 E. N. 51 19 W. S. 52 11 W.	870 736 232	Grind. Raley. Inigoes.
2	38 09 53.02	76 26 32.20	N. 27 16 W. S. 44 21 W. S. 32 50 E.	S. 27 16 E. N. 44 21 E. N. 32 50 W.	501 069 573	Chan. Grind. Kennedy.
3	38 10 05.78	76 26 45.85	S. 36 29 E. N. 83 50 E. N. 30 39 W.	N. 36 28 W. S. 83 50 W. S. 30 39 E.	1,134 136 970	Kennedy. Chan. Bello.
4	38 10 06.21	76 26 40.81	N. 37 29 W. S. 21 30 W. S. 30 14 E.	S. 37 29 E. N. 21 30 E. N. 30 14 W.	1,032 1,223 1,072	Bello. Grind. Kennedy.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 09 50.06	76 26 21.42	N. 77 23 W. S. 58 25 W. S. 3 33 E.	S. 77 23 E. N. 58 25 E. N. 3 33 W.	2,030 1,132 382	Coppage. Grind. Kennedy.
6	38 09 39.98	76 26 25.80	S. 73 22 E. N. 24 19 W. S. 73 23 W.	N. 73 22 W. S. 24 19 E. N. 73 23 E.	146 970 884	Kennedy. Chan. Grind.
7	38 09 32.42	76 26 21.04	S. 40 36 E. N. 53 02 E. N. 3 39 E.	N. 40 36 W. S. 53 02 W. S. 3 39 W.	716 94 213	Raley. Inigoes. Kennedy.

GRAVELLY RUN.

(Middle St. Marys River—Chart No. 24.)

1	38 10 05.78	76 26 45.85	S. 36 29 E. N. 83 50 E. N. 30 39 W.	N. 36 28 W. S. 83 50 W. S. 30 39 E.	1,134 136 970	Kennedy. Chan. Bello.
2	38 10 28.46	76 26 34.00	N. 85 06 W. S. 13 35 W. S. 52 01 E.	S. 85 06 E. N. 13 35 E. N. 52 01 W.	812 772 233	Bello. Chan. Gravel.
3	38 10 38.22	76 26 09.08	N. 12 06 E. N. 61 06 W. S. 45 24 W.	S. 12 06 W. S. 61 06 E. N. 45 24 E.	544 1,256 674	Brome. McKay. Gravel.
4	38 10 59.19	76 26 09.28	S. 34 26 E. N. 1 45 W. N. 69 11 W.	N. 34 26 W. S. 1 45 E. S. 69 11 E.	211 542 817	Brome. Calvert Monument. Deep.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GRAVELLY RUN—Continued.

(Middle St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / '	° / '	Yards.	
5	38 10 59.62	76 26 01.46	N. 23 03 W.	S. 23 04 E.	573	Calvert Monument. Deep. Brome.
			N. 74 09 W.	S. 74 09 E.	1,009	
			S. 25 13 W.	N. 25 13 E.	209	
Thence from corner No. 5 along the mean low-water line of the shore to corner No. 6, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
6	38 10 06.21	76 26 40.81	N. 37 29 W.	S. 37 29 E.	1,032	Bello. Grind. Kennedy.
			S. 21 30 W.	N. 21 30 E.	1,223	
			S. 30 14 E.	N. 30 14 W.	1,072	

WEST ST. MARYS.

(Middle St. Marys River—Chart No. 24.)

1	38 11 07.80	76 26 37.96	S. 40 22 W. S. 62 15 E. N. 71 22 E.	N. 40 21 E. N. 62 15 W. S. 71 23 W.	512 907 788	McKay. Brome. Calvert Monument.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 11 18.76	76 26 39.42	N. 9 10 E. S. 6 00 E. S. 81 27 E.	S. 9 10 W. N. 6 00 W. N. 81 27 W.	201 372 795	Pagan. Deep. Calvert Monument.
3	38 11 18.43	76 26 34.56	N. 24 59 W. S. 14 10 W. S. 29 24 W.	S. 24 59 E. N. 14 10 E. N. 29 24 E.	231 370 862	Pagan. Deep. McKay.
4	38 11 07.98	76 26 33.60	N. 12 21 W. S. 87 00 W. S. 48 28 W.	S. 12 21 E. N. 87 00 E. N. 48 28 E.	575 116 597	Pagan. Deep. McKay.

SEMINARY.

(Upper St. Marys River—Chart No. 24.)

1	38 11 09.44	76 26 11.38	N. 31 30 E.	S. 31 30 W.	223	Episcopal Church cross.
			N. 11 21 E.	S. 11 21 W.	200	Calvert Monument.
			S. 85 32 W.	N. 85 32 E.	710	Deep.
2	38 11 17.82	76 26 23.50	N. 59 34 W.	S. 59 34 E.	454	Pagan.
			S. 48 43 W.	N. 48 43 E.	511	Deep.
			S. 76 35 E.	N. 76 35 W.	371	Calvert Monument.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SEMINARY—Continued.

(Upper St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
3	° / ' " 38 11 25.56	° / ' " 76 26 03.82	° / ' " N. 34 40 E. S. 88 02 W. S. 24 59 W.	° / ' " S. 34 40 W. N. 88 02 E. N. 24 59 E.	Yards. 744 915 383	Bend. Pagan. Calvert Monument.
4	° / ' " 38 11 20.60	° / ' " 76 26 00.64	N. 23 28 E. N. 82 15 W. S. 53 51 W.	S. 23 29 W. S. 82 14 E. N. 53 51 E.	849 1,009 305	Bend. Pagan. Calvert Monument.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	° / ' " 38 11 10.80	° / ' " 76 26 07.96	N. 10 04 E. N. 18 57 W. S. 82 47 W.	S. 10 04 W. S. 18 57 E. N. 82 46 E.	146 158 805	Episcopal Church cross. Calvert Monument. Deep.

PAGAN.

(Upper St. Marys River—Chart No. 24.)

1	38 11 27.28	76 26 40.00	N. 79 36 W. S. 27 56 E. N. 68 14 E.	S. 79 36 E. N. 27 56 W. S. 68 15 W.	1,069 101 1,492	West Hollow. Pagan. Bend.
2	38 11 33.35	76 26 41.14	S. 89 19 W. S. 14 50 E. N. 76 11 E.	N. 89 19 E. N. 14 50 W. S. 76 11 W.	1,021 303 1,458	West Hollow. Pagan. Bend.
3	38 11 34.50	76 26 34.24	S. 87 36 W. S. 17 39 W. N. 75 52 E.	N. 87 35 E. N. 17 39 E. S. 75 52 W.	1,206 349 1,271	West Hollow. Pagan. Bend.
4	38 11 28.18	76 26 32.54	N. 82 34 W. S. 51 38 W. N. 66 14 E.	S. 82 35 E. N. 51 37 E. S. 66 14 W.	1,260 193 1,297	West Hollow. Pagan. Bend.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BISCOE.

(Upper St. Marys River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 11 28.34	76 26 57.20	S. 76 05 E. N. 14 16 E. N. 75 10 W.	N. 76 05 W. S. 14 16 W. S. 75 10 E.	521 1,326 614	Pagan. Horseshoe. West Hollow.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 11 28.66	76 27 02.06	S. 77 55 E. N. 19 39 E. N. 72 30 W.	N. 77 54 W. S. 19 39 W. S. 72 30 E.	649 1,356 487	Pagan. Horseshoe. West Hollow.
3	38 11 33.42	76 27 02.00	S. 64 54 E. N. 22 09 E. S. 88 13 W.	N. 64 54 W. S. 22 09 W. N. 88 13 E.	699 1,205 466	Pagan. Horseshoe. West Hollow.
4	38 11 33.38	76 26 55.58	S. 57 26 E. N. 14 16 E. S. 88 51 W.	N. 57 26 W. S. 14 16 W. N. 88 51 E.	548 1,152 637	Pagan. Horseshoe. West Hollow.

HORSESHOE.

(Upper St. Marys River—Chart No. 24.)

1	38 11 48.18	76 26 52.00	N. 16 56 E. N. 54 00 W. S. 55 02 W.	S. 16 56 W. S. 54 00 E. N. 55 02 E.	648 694 892	Horseshoe. Brief. West Hollow.
2	38 11 49.16	76 26 56.42	N. 27 34 E. N. 49 49 W. S. 48 25 W.	S. 27 34 W. S. 49 49 E. N. 48 25 E.	662 581 819	Horseshoe. Brief. West Hollow.
3	38 12 00.60	76 26 50.46	N. 36 21 E. S. 88 57 W. S. 39 42 W.	S. 36 21 W. N. 88 57 E. N. 39 42 E.	249 602 1,209	Horseshoe. Brief. West Hollow.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SHORT POINT.

(Upper St. Marys River—Chart No. 24.)

Corner of bar	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 11 48.24	76 27 13.76	S. 16 35 W. N. 51 12 E. N. 2 29 E.	N. 16 35 E. S. 51 12 W. S. 2 29 W.	535 984 406	West Hollow. Horseshoe. Brief.
2	38 11 49.96	76 27 18.60	S. 2 24 W. N. 57 59 E. N. 22 49 E.	N. 2 24 E. S. 57 59 W. S. 22 49 W.	572 1,058 377	West Hollow. Horseshoe. Brief.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 12 00.92	76 27 12.34	N. 75 26 E. N. 49 24 W. S. 43 08 W.	S. 75 27 W. S. 49 24 E. N. 43 08 E.	754 486 30	Horseshoe. Tenuate. Brief.
4	38 12 03.66	76 27 08.66	N. 81 16 E. N. 64 27 W. S. 46 02 W.	S. 81 16 W. S. 64 27 E. N. 46 02 E.	639 517 164	Horseshoe. Tenuate. Brief.
5	38 12 01.82	76 27 04.25	N. 72 48 E. N. 63 59 W. S. 77 34 W.	S. 72 49 W. S. 63 59 E. N. 77 34 E.	539 651 241	Horseshoe. Tenuate. Brief.

BRYAN.

(Upper St. Marys River—Chart No. 24.)

1	38 12 07.80	76 27 15.94	N. 72 59 W. S. 16 36 E. S. 86 59 E.	S. 72 59 E. N. 16 36 W. N. 86 59 W.	285 265 827	Tenuate. Brief. Horseshoe.
2	38 12 09.08	76 27 24.36	S. 45 17 E. S. 85 20 E. N. 50 35 W.	N. 45 17 W. N. 85 20 W. S. 50 35 E.	421 1,053 63	Brief. Horseshoe. Tenuate.
Thence from corner No. 2, along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 12 10.28	76 27 26.21	S. 83 27 E. N. 23 30 E. N. 58 55 W.	N. 83 27 W. S. 23 31 W. S. 58 55 E.	1,106 681 819	Horseshoe. Martin. Soak.
4	38 12 14.96	76 27 25.20	N. 27 41 E. N. 70 01 W. S. 9 41 W.	S. 27 41 W. S. 70 01 E. N. 9 41 E.	527 775 160	Martin. Soak. Tenuate.
5	38 12 12.86	76 27 14.59	N. 3 58 W. S. 74 15 W. S. 5 20 E.	S. 3 58 E. N. 74 15 E. N. 5 20 W.	539 321 426	Martin. Tenuate. Brief.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ST. GEORGE.

(St. George River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 07 23.00	76 28 15.13	N. 28 41 E. N. 77 16 W. S. 40 07 W.	S. 28 41 W. S. 77 17 E. N. 40 07 E.	651 1,413 258	Cherry. Adams. Smack.
2	38 07 40.98	76 28 19.34	S. 3 52 W. S. 85 22 E. N. 29 21 E.	N. 3 52 E. N. 85 22 W. S. 29 21 W.	806 427 1,015	Smack. Cherry. Price.
3	38 08 02.90	76 28 24.82	S. 3 24 E. S. 36 24 E. N. 77 12 W.	N. 3 24 W. N. 36 24 W. S. 77 12 E.	1,545 961 661	Smack. Cherry. Price.
4	38 08 12.32	76 28 00.82	S. 52 27 W. S. 16 24 W. S. 1 33 E.	N. 52 27 E. N. 16 24 E. N. 1 33 W.	2,218 1,939 172	Adams. Smack. Price.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 07 39.96	76 28 03.41	N. 45 49 W. S. 31 53 W. S. 73 48 E.	N. 45 49 E. N. 31 53 E. N. 73 47 W.	1,344 906 3,652	Goose. Smack. Between.

HURDLE.

(St. George River—Chart No. 24.)

1	38 07 17.82	76 28 32.98	S. 85 39 E. N. 46 32 E. N. 61 42 W.	N. 85 39 W. S. 46 32 W. S. 61 42 E.	309 1,085 1,025	Smack. Cherry. Adams.
2	38 07 38.80	76 29 04.22	N. 33 55 E. N. 51 43 W. S. 17 33 W.	S. 33 55 W. S. 51 44 E. N. 17 33 E.	1,176 1,368 233	Goose. Straits. Adams.
3	38 07 51.97	76 28 53.00	N. 33 53 E. N. 44 49 W. S. 29 00 W.	S. 33 53 W. S. 44 49 E. N. 29 00 E.	641 1,208 761	Goose. Coombs. Adams.
4	38 07 40.98	76 28 19.34	S. 3 52 W. S. 85 22 E. N. 29 21 E.	N. 3 52 E. N. 85 22 W. S. 29 21 W.	806 427 1,015	Smack. Cherry. Price.
5	38 07 23.00	76 28 15.13	N. 28 41 E. N. 77 16 W. S. 40 07 W.	S. 28 41 W. S. 77 17 E. N. 40 07 E.	651 1,413 258	Cherry. Adams. Smack.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GOOSE POINT.

(St. George River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 07 40.98	76 28 19.34	S. 3 52 W. S. 85 22 E. N. 29 21 E.	N. 3 52 E. N. 85 22 W. S. 29 21 W.	806 427 1,015	Smack. Cherry. Price.
2	38 07 51.97	76 28 53.00	N. 33 53 E. N. 44 49 W. S. 29 00 W.	S. 33 53 W. S. 44 49 E. N. 29 00 E.	641 1,208 761	Goose. Coombs. Adams.
3	38 08 07.74	76 28 39.59	S. 31 14 W. S. 15 52 E. S. 45 49 E.	N. 31 14 E. N. 15 52 W. N. 45 49 W.	1,400 1,774 1,344	Adams. Smack. Cherry.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 08 02.90	76 28 24.82	S. 3 24 E. S. 36 24 E. N. 77 12 W.	N. 3 24 W. N. 36 24 W. S. 77 12 E.	1,545 961 661	Smack. Cherry. Price.

ISLAND SHORE.

(St. George River—Chart No. 24.)

1	38 07 38.80	76 29 04.22	N. 33 55 E. N. 51 43 W. S. 17 33 W.	S. 33 55 W. S. 51 44 E. N. 17 33 E.	1,176 1,368 233	Goose. Straits. Adams.
2	38 07 48.56	76 29 31.42	S. 49 55 E. N. 10 09 E. N. 33 58 W.	N. 49 55 W. S. 10 09 W. S. 33 58 E.	855 988 626	Adams. Coombs. Straits.
3	38 08 00.28	76 29 40.90	S. 43 48 E. N. 36 29 E. N. 38 13 W.	N. 43 48 W. S. 36 29 W. S. 38 13 E.	1,310 717 156	Adams. Coombs. Straits.
4	38 08 15.42	76 29 40.34	S. 16 03 W. N. 80 53 E. N. 3 04 E.	N. 16 03 E. S. 80 53 W. S. 3 04 W.	402 417 478	Straits. Coombs. Taylor.
5	38 07 51.97	76 28 53.00	N. 33 53 E. N. 44 49 W. S. 29 00 W.	S. 33 53 W. S. 44 49 E. N. 29 00 E.	641 1,208 761	Goose. Coombs. Adams.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MILBOURNE SHORE.

(St. George River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 51.97	76 28 53.00	N. 33 53 E.	S. 33 53 W.	641	Goose.
			N. 44 49 W.	S. 44 49 E.	1,208	Coombs.
			S. 29 00 W.	N. 29 00 E.	761	Adams.
2	38 08 15.42	76 29 40.34	S. 16 03 W.	N. 16 03 E.	402	Straits.
			N. 80 53 E.	S. 80 53 W.	417	Coombs.
			N. 3 04 E.	S. 3 04 W.	478	Taylor.
3	38 08 21.42	76 29 43.00	S. 3 54 W.	N. 3 54 E.	595	Straits.
			S. 74 14 E.	N. 74 13 W.	501	Coombs.
			N. 19 15 E.	S. 19 15 W.	291	Taylor.
4	38 08 27.38	76 29 45.70	S. 55 31 W.	N. 55 31 E.	521	Swan.
			S. 58 41 E.	N. 58 41 W.	649	Coombs.
			N. 66 20 E.	S. 66 20 W.	184	Taylor.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 08 29.80	76 29 27.82	S. 88 30 W.	N. 88 30 E.	308	Taylor.
			S. 27 00 W.	N. 27 00 E.	980	Straits.
			S. 10 33 E.	N. 10 33 W.	426	Coombs.
6	38 08 17.38	76 29 24.89	S. 49 02 W.	N. 49 01 E.	692	Straits.
			S. 17 32 E.	N. 17 31 W.	1,598	Adams.
			S. 74 55 E.	N. 74 55 W.	1,250	Goose.
7	38 08 12.16	76 29 04.76	N. 71 50 W.	S. 71 50 E.	564	Coombs.
			S. 2 22 W.	N. 2 22 E.	1,348	Adams.
			S. 77 28 E.	N. 77 28 W.	687	Goose.
8	38 08 18.06	76 29 01.94	S. 87 51 W.	N. 87 51 E.	611	Coombs.
			S. 4 50 W.	N. 4 50 E.	1,551	Adams.
			S. 59 41 E.	N. 59 41 W.	690	Goose.
Thence from corner No. 8 along the mean low-water line of the shore to corner No. 9, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
9	38 08 07.74	76 28 39.59	S. 31 14 W.	N. 31 14 E.	1,400	Adams.
			S. 15 52 E.	N. 15 52 W.	1,774	Smack.
			S. 45 49 E.	N. 45 49 W.	1,344	Cherry.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BEDS—continued.

STRAITS.

(St. George River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 08 04.18	76 29 58.62	S. 88 40 E. N. 9 53 W. N. 88 00 W.	N. 88 40 W. S. 9 53 E. S. 88 01 E.	376 495 2,913	Straits. Swan. Piney Point Light.
2	38 08 15.94	76 30 07.24	S. 83 36 W. S. 56 11 E. N. 57 45 E.	N. 83 35 E. N. 56 11 W. S. 57 45 W.	2,699 728 171	Piney Point Light. Straits. Swan.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

3	38 08 15.32	76 30 01.66	S. 49 54 E. N. 85 57 E. N. 2 03 W.	N. 49 54 W. S. 85 56 W. S. 2 03 E.	596 982 115	Straits. Coombs. Swan.
4	38 08 13.00	76 29 57.38	S. 48 12 E. N. 80 19 E. N. 31 49 W.	N. 48 13 W. S. 80 19 W. S. 31 49 E.	459 878 224	Straits. Coombs. Swan.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

TARKHILL.

(St. George River—Chart No. 24.)

1	38 08 20.03	76 29 58.70	N. 57 56 E. N. 21 12 W. S. 60 30 W.	S. 57 56 W. S. 21 13 E. N. 60 30 E.	607 814 95	Taylor. Robrecht. Swan.
2	38 08 50.98	76 29 54.84	N. 57 12 W. S. 54 19 W. S. 55 35 E.	S. 57 13 E. N. 54 19 E. N. 55 35 W.	1,077 489 337	Russell. Robrecht. Tarkhill.
3	38 09 03.21	76 29 50.34	N. 80 34 W. S. 36 34 W. S. 14 42 E.	S. 80 35 E. N. 36 34 E. N. 14 42 W.	1,040 867 623	Russell. Robrecht. Tarkhill.
4	38 08 48.22	76 29 30.20	N. 66 37 W. S. 75 33 W. S. 21 17 W.	S. 66 38 E. N. 75 33 E. N. 21 16 E.	1,702 390 676	Russell. Tarkhill. Taylor.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

5	38 08 27.38	76 29 45.70	S. 55 31 W. S. 58 41 E. N. 66 20 E.	N. 55 31 E. N. 58 41 W. S. 66 20 W.	521 649 184	Swan. Coombs. Taylor.
6	38 08 21.42	76 29 43.00	S. 3 54 W. S. 74 14 E. N. 19 15 E.	N. 3 54 E. N. 74 13 W. S. 19 15 W.	595 501 291	Straits. Coombs. Taylor.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

171

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SWAN.

(St. George River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 20.03	76 29 58.70	N. 57 56 E. N. 21 12 W. S. 60 30 W.	S. 57 56 W. S. 21 13 E. N. 60 30 E.	607 814 95	Taylor. Robrecht. Swan.
2	38 08 27.78	76 30 07.22	S. 25 03 E. N. 85 22 E. N. 7 45 W.	N. 25 03 W. S. 85 22 W. S. 7 45 E.	340 744 503	Swan. Taylor. Robrecht.
3	38 08 42.54	76 30 09.76	S. 14 42 E. N. 82 04 E. N. 7 19 W.	N. 14 42 W. S. 82 04 W. S. 7 19 E.	833 681 1,167	Swan. Tarkhill. Lowell.
4	38 08 50.98	76 29 54.84	N. 57 12 W. S. 54 19 W. S. 55 35 E.	S. 57 13 E. N. 54 19 E. N. 55 35 W.	1,077 489 337	Russell. Robrecht. Tarkhill.

ROLLIN.

(St. George River—Chart No. 24.)

1	38 08 50.80	76 30 07.82	N. 43 36 W. S. 10 32 W. S. 73 31 E.	S. 43 36 E. N. 10 32 E. N. 73 31 W.	813 283 651	Russell. Robrecht. Tarkhill.
2	38 08 59.04	76 30 20.32	S. 26 49 E. N. 12 26 E. N. 36 13 W.	N. 26 49 W. S. 12 26 W. S. 36 13 E.	623 616 385	Robrecht. Lowell. Russell.
3	38 09 03.57	76 30 12.88	N. 8 19 W. N. 69 39 W. S. 6 41 E.	S. 8 19 E. S. 69 39 E. N. 6 41 W.	453 454 714	Lowell. Russell. Robrecht.
4	38 08 50.98	76 29 54.84	N. 57 12 W. S. 54 19 W. S. 55 35 E.	S. 57 13 E. N. 54 19 E. N. 55 35 W.	1,077 489 337	Russell. Robrecht. Tarkhill.

CEDAR POINT.

(St. George River—Chart No. 24.)

1	38 08 50.98	76 29 54.84	N. 57 12 W. S. 54 19 W. S. 55 35 E.	S. 57 13 E. N. 54 19 E. N. 55 35 W.	1,077 489 337	Russell. Robrecht. Tarkhill.
2	38 09 03.57	76 30 12.88	N. 8 19 W. N. 69 39 W. S. 6 41 E.	S. 8 19 E. S. 69 39 E. N. 6 41 W.	453 454 714	Lowell. Russell. Robrecht.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CEDAR POINT—Continued.

(St. George River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
3	38 09 10.59	76 30 01.22	N. 45 13 E.	S. 45 13 W.	434	Arbuckle.
			N. 60 37 W.	S. 60 37 E.	432	Lowell.
			S. 83 44 W.	N. 83 44 E.	740	Russell.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 09 03.21	76 29 50.34	N. 80 34 W.	S. 80 35 E.	1,040	Russell.
			S. 36 34 W.	N. 36 34 E.	867	Robrecht.
			S. 14 42 E.	N. 14 42 W.	623	Tarkhill.

SHEHAN.

(St. George River—Chart No. 24.)

1	38 08 59.04	76 30 20.32	S. 26 49 E. N. 12 26 E. N. 36 13 W.	N. 26 49 W. S. 12 26 W. S. 36 13 E.	623 616 385	Robrecht. Lowell. Russell.
2	38 09 04.56	76 30 28.60	S. 34 03 E. N. 40 23 E. N. 3 11 W.	N. 34 03 W. S. 40 23 W. S. 3 11 E.	898 545 125	Robrecht. Lowell. Russell.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 09 08.25	76 30 28.86	S. 30 25 E. N. 51 05 E. N. 4 17 W.	N. 30 24 W. S. 51 05 W. S. 4 17 E.	1,005 463 875	Robrecht. Lowell. Shehan.
4	38 09 10.60	76 30 24.20	N. 48 08 E. N. 13 26 W. S. 57 26 W.	S. 48 08 W. S. 13 26 E. N. 57 26 E.	316 816 147	Lowell. Shehan. Russell.
5	38 09 15.18	76 30 27.62	S. 8 04 W. N. 80 07 E. N. 8 47 W.	N. 8 04 E. S. 80 07 W. S. 8 47 E.	235 332 645	Russell. Lowell. Shehan.
6	38 09 18.67	76 30 20.18	N. 29 42 W. S. 33 20 W. S. 64 47 E.	S. 29 42 E. N. 33 20 E. N. 64 47 W.	599 421 142	Shehan. Russell. Lowell.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SHEHAN—Continued.

(St. George River—Chart No. 24.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
9	38 09 10.59	76 30 01.22	N. 45 13 E. N. 60 37 W. S. 83 44 W.	S. 45 13 W. S. 60 37 E. N. 83 44 E.	434 432 740	Arbuckle. Lowell. Russell.
10	38 09 03.57	76 30 12.88	N. 8 19 W. N. 69 39 W. S. 6 41 E.	S. 8 19 E. S. 69 39 E. N. 6 41 W.	453 454 714	Lowell. Russell. Robrecht.

LONG.

(St. George River—Chart No. 24.)

1	38 09 20.80	76 30 31.64	S. 73 01 E. N. 1 05 E. N. 80 37 E.	N. 73 01 W. S. 1 05 W. S. 80 37 W.	454 451 439	Lowell. Shehan. Wall.
2	38 09 38.47	76 30 36.20	N. 53 23 W. S. 30 43 W. S. 41 36 E.	S. 53 23 E. N. 30 43 E. N. 41 36 W.	611 610 196	Chadwick. Wall. Shehan.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 09 29.00	76 30 17.70	S. 75 42 W. S. 23 03 W. S. 67 06 E.	N. 75 42 E. N. 23 03 E. N. 67 06 W.	830 759 810	Wall. Russell. Arbuckle.

CHADWICK.

(St. George River—Chart No. 24.)

1	38 09 28.78	76 30 47.39	S. 3 56 W. N. 67 08 E. N. 15 36 W.	N. 3 56 E. S. 67 09 W. S. 15 36 E.	198 464 718	Wall. Shehan. Chadwick.
2	38 09 31.02	76 30 52.19	S. 22 42 E. N. 79 19 E. N. 6 03 W.	N. 22 42 W. S. 79 19 W. S. 6 03 E.	206 505 620	Wall. Shehan. Chadwick.
3	38 09 46.26	76 30 47.96	N. 60 07 W. S. 80 52 W. S. 0 06 E.	S. 60 07 E. N. 80 52 E. N. 0 06 W.	206 478 787	Chadwick. Guither. Wall.
4	38 09 39.14	76 30 41.50	N. 75 42 W. S. 17 18 W. S. 58 04 E.	S. 75 42 E. N. 17 18 E. N. 58 04 W.	665 573 319	Guither. Wall. Shehan.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MOULDY CREEK.

(Upper Bretons Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / //	° / //	° /	° /	Yards.	
1	38 16 00.00	76 37 51.44	N. 1 24 W. N. 39 58 W. S. 68 31 W.	S. 1 24 E. S. 39 58 E. N. 68 31 E.	782 988 334	Cedar. Noname. Mouldy.
2	38 16 00.00	76 37 58.74	N. 48 21 E. N. 30 11 W. S. 43 35 W.	S. 48 21 W. S. 30 11 E. N. 43 35 E.	370 876 168	Pine. Noname. Mouldy.
3	38 16 28.70	76 38 05.44	S. 51 12 W. S. 62 17 E. N. 21 22 E.	N. 51 12 E. N. 62 17 W. S. 21 22 W.	336 398 655	Noname. Cedar. Buzzard.
4	38 16 24.63	76 37 52.98	S. 82 55 W. S. 24 20 E. N. 35 26 E.	N. 82 55 E. N. 24 20 W. S. 35 26 W.	598 52 436	Noname. Cedar. Corn.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

ISLAND.

(Upper Bretons Bay—Chart No. 25.)

1	38 15 59.22	76 38 50.08	S. 83 15 E. N. 23 09 E. N. 84 52 W.	N. 83 14 W. S. 23 09 W. S. 84 53 E.	656 270 744	Beau. Healey. Hollow.
2	38 16 05.53	76 38 47.26	S. 55 16 W. S. 2 03 E. N. 41 18 E.	N. 55 16 E. N. 2 03 W. S. 41 18 W.	967 889 47	Trees. Lovers. Healey.
3	38 16 04.84	76 38 40.20	S. 55 35 E. N. 29 49 E. N. 69 28 W.	N. 55 35 W. S. 29 49 W. S. 69 28 E.	471 166 167	Beau. Belle. Healey.
4	38 16 11.84	76 38 25.36	N. 36 47 E. S. 73 37 W. S. 0 36 W.	S. 36 47 W. N. 73 37 E. N. 0 36 E.	447 325 503	Noname. Belle. Beau.
5	38 16 03.00	76 38 19.42	N. 66 14 W. S. 38 34 W. S. 62 46 E.	S. 66 14 E. N. 38 34 E. N. 62 45 W.	513 263 488	Belle. Beau. Mouldy.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PAW PAW HOLLOW.

(Upper Bretons Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / '	° / '	° / '	° / '	Yards.	
1	38 15 46.00	76 38 55.86	N. 48 48 W.	S. 48 48 E.	779	Hollow.
			N. 79 15 W.	S. 79 15 E.	576	Trees.
			S. 48 32 E.	N. 48 32 W.	348	Lovers.
2	38 15 53.84	76 39 09.82	N. 40 59 W.	S. 40 59 E.	328	Hollow.
			S. 51 13 W.	N. 51 13 E.	250	Trees.
			S. 51 56 E.	N. 51 56 W.	803	Lovers.
3	38 16 09.17	76 38 58.40	S. 62 36 W.	N. 62 35 E.	584	Hollow.
			S. 22 04 W.	N. 22 04 E.	2,773	What.
			S. 75 03 E.	N. 75 03 W.	339	Healey.
4	38 16 05.53	76 38 47.26	S. 55 16 W.	N. 55 16 E.	967	Trees.
			S. 2 03 E.	N. 2 03 W.	889	Lovers.
			N. 41 18 E.	S. 41 18 W.	47	Healey.
5	38 15 59.22	76 38 50.08	S. 83 15 E.	N. 83 14 W.	656	Beau.
			N. 23 09 E.	S. 23 09 W.	270	Healey.
			N. 84 52 W.	S. 84 53 E.	744	Hollow.

LOVERS POINT.

(Middle Bretons Bay—Chart No. 25.)

1	38 15 27.30	76 39 02.52	N. 47 33 E.	S. 47 33 W.	593	Lovers.
			N. 27 48 W.	S. 27 48 E.	834	Trees.
			S. 38 50 W.	N. 38 50 E.	1,486	What.
2	38 15 53.84	76 39 09.82	N. 40 59 W.	S. 40 59 E.	328	Hollow.
			S. 51 13 W.	N. 51 13 E.	250	Trees.
			S. 51 56 E.	N. 51 56 W.	803	Lovers.
3	38 15 46.00	76 38 55.86	N. 48 48 W.	S. 48 48 E.	779	Hollow.
			N. 79 15 W.	S. 79 15 E.	576	Trees.
			S. 48 32 E.	N. 48 32 W.	348	Lovers.
4	38 15 27.46	76 38 55.38	N. 32 07 E.	S. 32 07 W.	466	Lovers.
			N. 38 19 W.	S. 38 19 E.	934	Trees.
			S. 43 58 W.	N. 43 58 E.	1,616	What.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

STONY.

(Middle Bretons Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / '	° / '	° / '	° / '	Yards.	
1	38 15 18.94	76 39 49.00	N. 21 58 W. S. 54 43 W. S. 19 07 E.	S. 21 58 E. N. 54 43 E. N. 19 07 W.	423 1,390 930	Paw. Protestant. What.
2	38 15 30.80	76 40 39.14	N. 68 57 W. S. 9 22 E. S. 89 39 E.	S. 68 57 E. N. 9 21 W. N. 89 39 W.	363 1,219 1,175	Cherry Cove. Protestant. Paw.
3	38 15 36.14	76 40 35.30	S. 83 32 W. S. 3 58 E. S. 40 27 E.	N. 83 32 E. N. 3 58 W. N. 40 26 W.	443 1,387 2,118	Cherry Cove. Protestant. What.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 15 42.60	76 39 42.36	S. 39 36 W. S. 4 27 E. N. 71 39 E.	N. 39 36 E. N. 4 27 W. S. 71 39 W.	525 1,079 705	Paw. What. Trees.
5	38 15 38.58	76 39 34.38	N. 89 07 E. N. 51 59 E. S. 63 44 W.	S. 89 07 W. S. 51 59 W. N. 63 44 E.	1,285 581 610	Lovers. Trees. Paw.

GOUGH.

(Middle Bretons Bay—Chart No. 25.)

1	38 14 52.18	76 39 58.20	N. 87 11 E. N. 3 48 E. N. 83 39 W.	S. 87 12 W. S. 3 48 W. S. 83 39 E.	549 1,298 897	What. Paw. Protestant.
2	38 14 59.78	76 39 59.20	S. 68 10 E. N. 6 12 E. S. 79 42 W.	N. 68 10 W. S. 6 12 W. N. 79 41 E.	620 1,044 878	What. Paw. Protestant.
3	38 15 00.46	76 39 19.05	N. 33 54 E. N. 43 17 W. S. 84 40 W.	S. 33 54 W. S. 43 18 E. N. 84 40 E.	1,573 1,392 1,940	Lovers. Paw. Protestant.
4	38 14 56.02	76 39 18.40	N. 30 35 E. N. 39 53 W. S. 89 05 W.	S. 30 35 W. S. 39 54 E. N. 89 04 E.	1,691 1,516 1,949	Lovers. Paw. Protestant.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BLACK WALNUT.

(Lower Bretons Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 14 31.04	76 41 12.92	S. 81 47 W. S. 3 33 E. N. 54 56 E.	N. 81 47 E. N. 3 33 W. S. 54 55 W.	1,191 84 412	Newtown. Dunc. Fence.
2	38 14 40.99	76 41 27.04	N. 64 31 W. S. 57 49 W. S. 42 23 E.	S. 64 31 E. N. 57 49 E. N. 42 23 W.	749 940 564	Sandbar. Newtown. Dunc.
3	38 14 53.04	76 41 10.31	S. 85 43 W. S. 28 06 E. N. 86 06 E.	N. 85 43 E. N. 28 06 W. S. 86 06 W.	1,125 573 1,029	Sandbar. Fence. Protestant.
4	38 15 07.04	76 40 27.90	N. 47 48 E. N. 34 22 W. S. 14 06 W.	S. 47 48 W. S. 34 22 E. N. 14 06 E.	1,182 1,120 413	Paw. Cherry Cove. Protestant.
5	38 14 59.78	76 39 59.20	S. 68 10 E. N. 6 12 E. S. 79 42 W.	N. 68 10 W. S. 6 12 W. N. 79 41 E.	620 1,044 878	What. Paw. Protestant.
6	38 14 52.18	76 39 58.20	N. 87 11 E. N. 3 48 E. N. 83 39 W.	S. 87 12 W. S. 3 48 W. S. 83 39 E.	549 1,298 897	What. Paw. Protestant.
7	38 14 44.29	76 39 57.42	N. 26 07 E. N. 2 24 E. N. 68 10 W.	S. 26 07 W. S. 2 24 W. S. 68 10 E.	2,436 1,563 982	Trees. Paw. Protestant.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

RAILWAY.

(Lower Bretons Bay—Chart No. 25.)

1	38 14 53.58	76 41 50.42	S. 28 05 W. S. 68 39 E. N. 2 24 E.	N. 28 05 E. N. 68 38 W. S. 2 24 W.	116 1,434 945	Sandbar. Fence. Compton.
2	38 14 59.46	76 41 59.28	S. 31 08 E. S. 86 24 E. N. 20 12 E.	N. 31 08 W. N. 86 23 W. S. 20 12 W.	350 2,334 795	Sandbar. Protestant. Compton.
3	38 15 32.48	76 41 36.98	S. 40 53 W. S. 54 02 E. S. 88 37 E.	N. 40 53 E. N. 54 02 W. N. 88 36 W.	487 2,145 2,713	Compton. Protestant. Paw.
4	38 15 29.21	76 41 19.62	S. 71 43 W. S. 47 53 E. N. 76 00 E.	N. 71 42 E. N. 47 53 W. S. 76 00 W.	821 1,718 761	Compton. Protestant. Cherry Cove.
5	38 15 26.92	76 40 41.23	S. 13 20 E. N. 84 15 E. N. 47 15 W.	N. 13 20 W. S. 84 16 W. S. 47 15 E.	1,102 1,236 384	Protestant. Paw. Cherry Cove.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BRETONS BAY.

(Lower Bretons Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 14 25.00	76 41 42.04	S. 86 12 E. N. 17 51 W. N. 85 17 W.	N. 86 11 W. S. 17 51 E. S. 85 17 E.	696 904 406	Grove. Sandbar. Newtown.
2	38 14 38.98	76 42 01.00	S. 12 49 E. S. 66 39 E. N. 30 11 E.	N. 12 49 W. N. 66 39 W. S. 30 11 W.	448 1,306 452	Newtown. Grove. Sandbar.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 14 48.12	76 41 54.53	S. 5 33 W. S. 51 12 E. N. 33 50 E.	N. 5 33 E. N. 51 11 W. S. 33 50 W.	750 1,318 98	Newtown. Grove. Sandbar.
4	38 14 49.81	76 41 34.62	S. 66 36 E. S. 36 51 W. N. 86 55 W.	N. 66 36 W. N. 36 51 E. S. 86 55 E.	998 1,006 476	Fence. Newtown. Sandbar.
5	38 14 25.80	76 41 31.20	S. 79 48 E. N. 34 11 W. N. 89 28 W.	N. 79 47 W. S. 34 12 E. S. 89 28 E.	413 1,006 692	Grove. Sandbar Newtown.

BLUE SOW.

(Lower Bretons Bay—Chart No. 25.)

1	38 13 46.40	76 42 40.16	N. 45 50 E. N. 59 56 W. S. 25 57 W.	S. 45 50 W. S. 59 56 E. N. 25 57 E.	805 930 1,938	Kaywood. St. Clement. Heron.
2	38 13 50.86	76 42 44.04	N. 58 54 E. N. 65 47 W. S. 21 32 W.	S. 58 54 W. S. 65 48 E. N. 21 31 E.	795 769 2,030	Kaywood. St. Clement. Heron.
3	38 14 00.95	76 42 26.48	S. 88 47 W. S. 28 30 W. N. 71 48 E.	N. 88 46 E. N. 28 29 E. S. 71 48 W.	1,168 2,540 224	St. Clement. Heron. Kaywood.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 14 08.44	76 42 13.04	S. 38 19 W. S. 88 02 E. N. 35 21 E.	N. 38 19 E. N. 88 03 W. S. 35 21 W.	233 1,574 725	Kaywood. Cedoak. Newtown.
5	38 14 17.82	76 41 56.29	N. 79 38 E. N. 5 21 W. S. 49 47 W.	S. 79 39 W. S. 5 21 E. N. 49 46 E.	1,091 277 772	Grove. Newtown. Kaywood.
6	38 14 13.42	76 41 52.08	N. 70 18 E. N. 18 00 W. S. 63 28 W.	S. 70 19 W. S. 18 00 E. N. 63 28 E.	1,021 446 784	Grove. Newtown. Kaywood.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HERON ISLAND SOUND.

(Entrance to Bretons and St. Clement Bays—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 13 08.76	76 42 46.00	N. 21 49 E.	S. 21 49 W.	1,975	Kaywood.
			N. 20 31 W.	S. 20 31 E.	1,853	St. Clement.
			S. 55 40 W.	N. 55 40 E.	839	Heron.
2	38 13 32.26	76 43 05.00	S. 8 25 W.	N. 8 25 E.	1,280	Heron.
			N. 50 02 E.	S. 50 02 W.	1,615	Kaywood.
			N. 8 40 W.	S. 8 40 E.	956	St. Clement.
3	38 13 47.42	76 41 33.00	N. 37 47 E.	S. 37 48 W.	829	Cedoak.
			N. 66 29 W.	S. 66 29 E.	1,319	Kaywood.
			S. 56 01 W.	N. 56 00 E.	3,177	Heron.

HERON ISLAND REEF.

(Entrance to Bretons and St. Clement Bays—Chart No. 25.)

1	38 12 54.73	76 43 12.04	N. 1 08 E.	S. 1 08 W.	2,209	St. Clement.
			N. 30 49 W.	S. 30 50 E.	3,305	St. Patrick.
			S. 68 40 W.	N. 68 39 E.	2,592	Blakistone Island Light.
2	38 13 07.68	76 43 51.72	S. 44 37 W.	N. 44 36 E.	1,933	Blakistone Island Light.
			S. 67 32 E.	N. 67 31 W.	1,142	Heron.
			N. 31 49 E.	S. 31 50 W.	2,090	St. Clement.
3	38 13 08.36	76 43 24.62	S. 55 56 W.	N. 55 55 E.	2,510	Blakistone Island Light.
			S. 36 04 E.	N. 36 04 W.	568	Heron.
			N. 12 14 E.	S. 12 14 W.	1,785	St. Clement.
4	38 13 01.44	76 43 06.38	N. 31 32 E.	S. 31 33 W.	2,437	Kaywood.
			N. 3 05 W.	S. 3 05 E.	1,984	St. Clement.
			S. 33 39 W.	N. 33 39 E.	271	Heron.

DUKEHART CHANNEL.

(Lower St. Clement Bay—Chart No. 25.)

1	38 12 55.78	76 44 28.62	S. 21 05 W.	N. 21 05 E.	1,049	Blakistone Island Light.
			S. 89 00 E.	N. 89 00 W.	2,037	Heron.
			N. 43 46 E.	S. 43 46 W.	3,008	St. Clement.
2	38 13 04.56	76 45 04.28	S. 24 14 E.	N. 24 14 W.	1,398	Blakistone Island Light.
			S. 83 40 E.	N. 83 39 W.	3,004	Heron.
			N. 27 16 E.	S. 27 17 W.	2,827	St. Patrick.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

DUKEHART CHANNEL—Continued.

(Lower St. Clement Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
3	38 13 12.00	76 45 07.02	S. 22 56 E.	N. 22 55 W.	Yards. 1,656	Blakistone Island Light.
			S. 79 13 E.	N. 79 12 W.	3,113	Heron.
			N. 62 21 E.	S. 62 22 W.	3,502	St. Clement.
4	38 13 37.94	76 44 32.38	S. 6 34 W.	N. 6 34 E.	2,416	Blakistone Island Light.
			S. 55 43 E.	N. 55 42 W.	2,586	Heron.
			N. 17 48 E.	S. 17 49 W.	1,450	St. Patrick.
5	38 13 25.40	76 43 45.90	S. 41 07 E.	N. 41 07 W.	1,372	Heron.
			N. 38 49 E.	S. 38 49 W.	1,510	St. Clement.
			N. 23 43 W.	S. 23 43 E.	1,970	St. Patrick.

HORSE.

(Lower St. Clement Bay—Chart No. 25.)

1	38 13 25.40	76 43 45.90	S. 41 07 E.	N. 41 07 W.	1,372	Heron.
			N. 38 49 E.	S. 38 49 W.	1,510	St. Clement.
			N. 23 43 W.	S. 23 43 E.	1,970	St. Patrick.
2	38 13 37.94	76 44 32.38	S. 6 34 W.	N. 6 34 E.	2,416	Blakistone Island Light.
			S. 55 43 E.	N. 55 42 W.	2,586	Heron.
			N. 17 48 E.	S. 17 49 W.	1,450	St. Patrick.
3	38 14 05.42	76 44 22.63	S. 38 14 E.	N. 38 14 W.	3,035	Heron.
			S. 84 47 E.	N. 84 46 W.	1,929	St. Clement.
			N. 22 04 E.	S. 22 04 W.	491	St. Patrick.
4	38 14 11.48	76 43 51.36	S. 70 46 E.	N. 70 46 W.	1,154	St. Clement.
			N. 11 05 W.	S. 11 05 E.	1,075	Canoe.
			N. 68 50 W.	S. 68 50 E.	694	St. Patrick.
5	38 13 56.66	76 43 42.40	S. 21 09 E.	N. 21 09 W.	2,244	Heron.
			N. 81 59 E.	S. 81 59 W.	860	St. Clement.
			N. 49 45 W.	S. 49 45 E.	1,160	St. Patrick.

ST. CLEMENT ENTRANCE.

(Lower St. Clement Bay—Chart No. 25.)

1	38 13 25.40	76 43 45.90	S. 41 07 E.	N. 41 07 W.	1,372	Heron.
			N. 38 49 E.	S. 38 49 W.	1,510	St. Clement.
			N. 23 43 W.	S. 23 43 E.	1,970	St. Patrick.
2	38 13 56.66	76 43 42.40	S. 21 09 E.	N. 21 09 W.	2,244	Heron.
			N. 81 59 E.	S. 81 59 W.	860	St. Clement.
			N. 49 45 W.	S. 49 45 E.	1,160	St. Patrick.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ST. CLEMENT ENTRANCE—Continued.

(Lower St. Clement Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
3	38 13 56.94	76 43 20.18	S. 5 54 E. N. 67 02 E. N. 63 22 W.	N. 5 54 W. S. 67 02 W. S. 63 23 E.	2,108 282 1,652	Heron. St. Clement. St. Patrick.
4	38 13 33.38	76 43 20.70	S. 10 02 E. N. 16 51 E. N. 43 37 W.	N. 10 01 W. S. 16 51 W. S. 43 38 E.	1,323 947 2,120	Heron. St. Clement. St. Patrick.

OLD WRECK.

(Lower St. Clement Bay—Chart No. 25.)

1	38 14 11.48	76 43 51.36	S. 70 46 E. N. 11 05 W. N. 68 50 W.	N. 70 46 W. S. 11 05 E. S. 68 50 E.	1,154 1,075 694	St. Clement. Canoe. St. Patrick.
2	38 14 33.42	76 44 07.20	S. 24 47 W. S. 53 27 E. N. 34 15 E.	N. 24 47 E. N. 53 27 W. S. 34 15 W.	539 1,881 382	St. Patrick. St. Clement. Canoe.
3	38 14 26.96	76 43 46.24	S. 82 22 E. N. 32 45 W. S. 70 52 W.	N. 82 21 W. S. 32 45 E. N. 70 52 E.	1,124 635 829	Roof. Canoe. St. Patrick.

NEWTOWN FLATS.

(Lower St. Clement Bay—Chart No. 25.)

1	38 14 11.48	76 43 51.36	S. 70 46 E. N. 11 05 W. N. 68 50 W.	N. 70 46 W. S. 11 05 E. S. 68 50 E.	1,154 1,075 694	St. Clement. Canoe. St. Patrick.
2	38 14 26.96	76 43 46.24	S. 82 22 E. N. 32 45 W. S. 70 52 W.	N. 82 21 W. S. 32 45 E. N. 70 52 E.	1,124 635 829	Roof. Canoe. St. Patrick.
3	38 14 56.72	76 43 15.80	S. 14 50 E. S. 75 37 E. N. 2 00 W.	N. 14 50 W. N. 75 37 W. S. 2 00 E.	1,190 877 729	Roof. Rails. Woods.
4	38 14 28.41	76 43 25.92	S. 70 57 E. N. 56 38 E. N. 61 16 W.	N. 70 56 W. S. 56 38 W. S. 61 16 E.	607 1,340 1,007	Roof. Rails. Canoe.
5	38 14 19.41	76 43 20.79	S. 23 07 E. N. 76 27 E. N. 52 19 W.	N. 23 07 W. S. 76 27 W. S. 52 19 E.	704 451 1,288	St. Clement. Roof. Canoe.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued:

CANOE CREEK.

(Lower St. Clement Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 14 56.72	76 43 15.80	S. 14 50 E. S. 75 37 E. N. 2 00 W.	N. 14 50 W. N. 75 37 W. S. 2 00 E.	1,100 877 729	Roof. Rails. Woods.
2	38 15 04.44	76 43 45.58	S. 26 15 W. S. 37 49 E. N. 58 33 E.	N. 26 15 E. N. 37 49 W. S. 58 33 W.	815 1,789 898	Canoe. Roof. Woods.
3	38 15 14.40	76 43 45.18	S. 19 11 W. S. 31 54 E. N. 80 00 E.	N. 19 11 E. N. 31 54 W. S. 80 01 W.	1,129 2,056 768	Canoe. Roof. Woods.
4	38 15 12.82	76 43 37.82	S. 29 13 W. S. 27 42 E. N. 71 37 E.	N. 29 13 E. N. 27 43 W. S. 71 37 W.	1,160 1,915 591	Canoe. Roof. Woods.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 15 13.80	76 43 23.60	S. 42 05 W. S. 53 06 E. N. 49 55 E.	N. 42 05 E. N. 53 05 W. S. 49 55 W.	1,410 1,319 237	Canoe. Rails. Woods.
6	38 15 11.94	76 43 10.40	N. 38 05 W. S. 52 48 W. S. 44 00 E.	S. 38 05 E. N. 52 47 E. N. 44 00 W.	274 1,627 1,016	Woods. Canoe. Rails.

CHAPEL POINT.

(Lower St. Clement Bay—Chart No. 25.)

1	38 14 49.79	76 43 04.26	S. 0 08 W. N. 88 20 E. N. 19 06 W.	N. 0 08 E. S. 88 20 W. S. 19 06 E.	919 542 1,017	Roof. Rails. Woods.
2	38 16 05.22	76 42 21.14	N. 24 02 W. S. 70 30 W. S. 37 37 E.	S. 24 02 E. N. 70 30 E. N. 37 37 W.	325 813 474	Howards. Shipping. Mansion.
3	38 16 06.13	76 42 16.80	N. 42 55 W. S. 71 06 W. S. 23 13 E.	S. 42 55 E. N. 71 06 E. N. 23 13 W.	364 933 443	Howards. Shipping. Mansion.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 14 50.26	76 42 43.85	N. 42 45 W. S. 82 49 W. S. 30 14 W.	S. 42 45 E. N. 82 48 E. N. 30 14 E.	1,289 2,018 1,083	Woods. Canoe. Roof.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BLUFF WOODS.

(Lower St. Clement Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 15 21.02	76 42 52.78	N. 66 14 E. N. 3 30 E. S. 81 56 W.	S. 66 14 W. S. 3 30 W. N. 81 56 E.	762 1,220 644	Chapel. Shipping. Woods.
2	38 15 25.78	76 43 07.50	S. 44 28 W. N. 82 21 E. N. 23 52 E.	N. 44 28 E. S. 82 21 W. S. 23 52 W.	352 1,100 1,157	Woods. Chapel. Shipping.
3	38 15 39.00	76 43 08.54	S. 17 25 W. S. 75 00 E. N. 38 55 E.	N. 17 25 E. N. 75 00 W. S. 38 55 W.	730 1,156 787	Woods. Chapel. Shipping.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 15 57.17	76 42 49.08	S. 28 33 W. S. 34 20 E. S. 84 21 E.	N. 28 32 E. N. 34 20 W. N. 84 21 W.	1,491 1,105 1,062	Woods. Chapel. Mansion.
5	38 16 01.36	76 42 32.60	S. 67 32 E. N. 21 55 E. S. 73 00 W.	N. 67 32 W. S. 21 55 W. N. 73 00 E.	643 460 483	Mansion. Howards. Shipping.

MILEYS CREEK.

(Lower St. Clement Bay—Chart No. 25.)

1	38 15 57.17	76 42 49.08	S. 28 33 W. S. 34 20 E. S. 84 21 E.	N. 28 32 E. N. 34 20 W. N. 84 21 W.	1,491 1,105 1,062	Woods. Chapel. Mansion.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 16 10.74	76 43 07.94	S. 69 53 E. N. 84 09 E. N. 7 41 E.	N. 69 52 W. S. 84 09 W. S. 7 41 W.	1,634 1,118 325	Mansion. Howards. Mileys.
3	38 16 20.27	76 43 06.31	S. 29 08 E. N. 75 00 E. N. 35 54 E.	N. 29 07 W. S. 75 00 W. S. 35 54 W.	891 958 1,375	Shipping. Bank. Cecil.
4	38 16 30.80	76 43 12.02	S. 27 20 E. S. 84 19 E. N. 22 08 E.	N. 27 19 W. N. 84 18 W. S. 22 08 W.	1,276 1,083 539	Shipping. Bank. Profound.
5	38 16 16.14	76 42 37.82	S. 77 10 E. N. 23 26 E. N. 79 35 W.	N. 77 10 W. S. 23 26 W. S. 79 35 E.	318 422 770	Howards. Bank. Mileys.
6	38 16 01.36	76 42 32.60	S. 67 32 E. N. 21 55 E. S. 73 00 W.	N. 67 32 W. S. 21 55 W. N. 73 00 E.	643 460 483	Mansion. Howards. Shipping.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ABELL.

(Upper St. Clement Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / //	° / //	° /	° /	Yards.	
1	38 16 29.56	76 42 34.58	N. 55 47 W. S. 69 38 W. S. 51 17 E.	S. 55 47 E. N. 69 37 E. N. 51 17 W.	958 900 105	Profound. Mileys. Bank.
2	38 16 31.90	76 42 42.34	N. 51 53 W. S. 58 23 W. S. 63 19 E.	S. 51 53 E. N. 58 23 E. N. 63 19 W.	746 748 323	Profound. Mileys. Bank.
3	38 16 39.27	76 42 41.18	S. 33 12 E. N. 16 15 E. N. 71 04 W.	N. 33 12 W. S. 16 15 W. S. 71 04 E.	369 493 653	Bank. Cecil. Profound.
4	38 16 41.80	76 42 27.48	N. 30 15 W. N. 82 40 W. S. 54 53 W.	S. 30 15 E. S. 82 40 E. N. 54 52 E.	449 990 1,262	Cecil. Profound. Mileys.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

REED POINT.

(Upper St. Clement Bay—Chart No. 25.)

1	38 16 51.30	76 42 39.00	N. 49 52 E. N. 39 37 W. S. 73 59 W.	S. 49 52 W. S. 39 38 E. N. 73 59 E.	105 982 702	Cecil. Rader. Profound.
2	38 17 14.60	76 42 56.50	S. 79 41 W. S. 37 12 E. N. 73 37 E.	N. 79 41 E. N. 37 12 W. S. 73 37 W.	164 991 778	Rader. Cecil. Place.
3	38 17 16.56	76 43 12.40	N. 82 31 E. N. 28 00 E. N. 27 19 W.	S. 82 32 W. S. 28 01 W. S. 27 18 E.	1,181 1,044 450	Place. Guest. Cobrums.
4	38 17 37.48	76 42 34.74	N. 67 01 W. S. 42 43 W. S. 1 17 W.	S. 67 01 E. N. 42 43 E. N. 1 17 E.	554 1,090 1,490	Guest. Rader. Cecil.
5	38 17 35.58	76 42 27.40	N. 68 19 W. S. 51 45 W. S. 9 06 W.	S. 68 19 E. N. 51 44 E. N. 9 06 E.	759 1,190 1,447	Guest. Rader. Cecil.
6	38 17 29.56	76 42 26.20	N. 56 45 W. S. 61 05 W. S. 12 02 W.	S. 56 45 E. N. 61 05 E. N. 12 02 E.	881 1,105 1,248	Guest. Rader. Cecil.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

REED POINT—Continued.

(Upper St. Clement Bay—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
7	38 17 20.58	76.42 30.10	S. 75 01 W.	N. 75 00 E.	894	Radec.
			S. 9 39 W.	N. 9 39 E.	934	Cecil.
			N. 69 05 E.	S. 69 05 W.	50	Place.
8	38 17 05.20	76 42 21.18	N. 19 31 W.	S. 19 31 E.	571	Place.
			N. 75 21 W.	S. 75 21 E.	1,136	Radec.
			S. 60 02 W.	N. 60 01 E.	1,327	Profound.

Thence from corner No. 8 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

GUEST MARSHES.

(Upper St. Clement Bay—Chart No. 25.)

1	38 17 31.74	76 43 03.94	S. 75 18 W.	N. 75 18 E.	445	Cobrums.
			S. 3 27 E.	N. 3 27 W.	608	Radec.
			N. 32 55 E.	S. 32 55 W.	488	Guest.
2	38 18 01.78	76 43 10.40	N. 11 09 E.	S. 11 09 W.	517	Stones.
			N. 42 17 W.	S. 42 17 E.	573	Turf.
			S. 54 02 W.	N. 54 02 E.	524	Dynard.
3	38 18 03.38	76 43 01.26	N. 17 38 W.	S. 17 38 E.	475	Stones.
			S. 61 32 W.	N. 61 32 E.	759	Dynard.
			S. 16 29 E.	N. 16 28 W.	685	Guest.
4	38 17 58.58	76 42 52.80	N. 58 03 W.	S. 58 04 E.	1,006	Turf.
			S. 77 22 W.	N. 77 22 E.	914	Dynard.
			S. 3 37 W.	N. 3 37 E.	496	Guest.
5	38 17 50.86	76 42 52.06	N. 47 46 W.	S. 47 47 E.	1,179	Turf.
			N. 86 08 W.	S. 86 08 E.	914	Dynard.
			S. 12 05 W.	N. 12 05 E.	240	Guest.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 6, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

6	38 17 37.48	76 42 34.74	N. 67 01 W.	S. 67 01 E.	554	Guest.
			S. 42 43 W.	N. 42 43 E.	1,090	Radec.
			S. 1 17 W.	N. 1 17 E.	1,490	Cecil.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HARRY JACKS.

(Upper St. Clement Bar—Chart No. 25.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 17 28.39	76 43 20.15	N. 53 05 E. N. 38 47 W. S. 43 25 E.	S. 53 05 W. S. 38 47 E. N. 43 25 W.	87 533 680	Guest. Tomakokin. Radec.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 17 29.96	76 43 30.00	N. 78 34 E. N. 63 52 E. N. 11 5 W.	N. 78 34 W. S. 63 52 W. S. 11 15 E.	267 1,067 370	Coburns. Guest. Tomakokin.
3	38 17 40.70	76 43 32.71	S. 38 47 E. N. 84 01 E. N. 22 41 E.	N. 38 47 W. S. 84 01 W. S. 22 41 W.	533 1,036 436	Coburns. Guest. Dynard.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 17 59.40	76 43 23.58	S. 18 03 W. S. 56 22 E. N. 4 04 W.	N. 18 03 E. N. 56 22 W. S. 4 04 E.	240 945 506	Dynard. Guest. Turf.
5	38 18 01.78	76 43 10.40	N. 11 09 E. N. 42 17 W. S. 54 02 W.	S. 11 09 W. S. 42 17 E. N. 54 02 E.	517 173 524	Stones. Turf. Dynard.
6	38 17 31.74	76 43 03.94	S. 75 18 W. S. 3 27 E. N. 32 55 E.	N. 75 18 E. N. 3 27 W. S. 32 55 W.	445 608 488	Coburns. Radec. Guest.

KEY.

(Upper Wicomico River—Chart No. 26.)

1	38 21 49.83	76 50 31.02	S. 66 37 W. S. 14 10 E. N. 84 48 E.	N. 66 36 E. N. 14 10 W. S. 84 49 W.	1,516 1,470 450	Stoddard. Cohouck. Key.
2	38 21 53.40	76 50 55.74	N. 84 01 W. S. 45 34 W. S. 85 53 E.	S. 84 02 E. N. 45 33 E. N. 85 53 W.	1,164 1,029 1,108	Upper. Stoddard. Key.
3	38 22 08.99	76 51 08.02	N. 3 01 W. S. 64 15 W. S. 67 05 E.	S. 3 01 E. N. 64 15 E. N. 67 04 W.	865 924 1,554	Barber. Upper. Key.
4	38 22 14.18	76 50 40.16	N. 48 43 W. S. 69 52 W. S. 41 33 E.	S. 48 44 E. N. 69 52 E. N. 41 33 W.	1,042 1,675 1,042	Barber. Upper. Key.
5	38 22 00.78	76 50 27.60	N. 44 26 W. S. 86 15 W. S. 47 29 E.	S. 44 26 E. N. 86 15 E. N. 47 29 W.	1,598 1,909 485	Barber. Upper. Key.

SURVEY OF OYSTER BARS, ST MARYS COUNTY MD

187

BOUNDARIES OF NATURAL OYSTER BARS—continued.

COHOUCK.

(Upper Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 20 51.98	76 50 58.86	N. 64 26 E.	S. 64 26 W.	1,218	Cohouck.
			N. 60 46 W.	S. 60 46 E.	1,004	Hayden.
			S. 72 34 W.	N. 72 34 E.	1,368	Burr.
Thence along county boundary, as delineated on chart No. 26, to corner No. 2.						
2	38 21 10.18	76 50 51.08	S. 84 22 E.	N. 84 22 W.	897	Cohouck.
			N. 49 23 W.	S. 49 24 E.	1,131	Stoddard.
			S. 83 30 W.	N. 83 29 E.	1,090	Hayden.
3	38 21 23.59	76 50 31.46	S. 34 29 E.	N. 34 29 W.	655	Cohouck.
			N. 26 27 E.	S. 26 28 W.	1,033	Key.
			N. 78 22 W.	S. 78 22 E.	1,409	Stoddard.
4	38 21 16.84	76 50 24.36	S. 30 18 E.	N. 30 18 W.	362	Cohouck.
			N. 13 17 E.	S. 13 17 W.	1,187	Key.
			N. 71 56 W.	S. 71 56 E.	1,649	Stoddard.
5	38 20 52.00	76 50 29.42	N. 31 08 E.	S. 31 08 W.	613	Cohouck.
			N. 73 33 W.	S. 73 33 E.	1,728	Hayden.
			S. 2 27 W.	N. 2 27 E.	1,317	Fact.

CHAPTICO LUMPS.

(Upper Wicomico River—Chart No. 26.)

1	38 20 20.70	76 51 13.00	N. 55 17 W.	S. 55 17 E.	1,132	Burr.
			S. 66 14 W.	N. 66 13 E.	1,660	Bowman.
			S. 76 42 E.	N. 76 42 W.	1,132	Fact.
Thence along county boundary, as delineated on chart No. 26, to corner No. 2.						
2	38 20 51.98	76 50 58.86	N. 64 26 E.	S. 64 26 W.	1,218	Cohouck.
			N. 60 46 W.	S. 60 46 E.	1,004	Hayden.
			S. 72 34 W.	N. 72 34 E.	1,368	Burr.
3	38 20 26.26	76 50 23.58	N. 6 38 E.	S. 6 38 W.	1,402	Cohouck.
			N. 78 29 W.	S. 78 29 E.	2,289	Burr.
			S. 25 19 W.	N. 25 19 E.	494	Fact.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MILLS EAST.

(Upper Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 20 00.00	76 51 11.88	N. 88 54 W. S. 15 50 W. N. 67 44 E.	S. 88 55 E. N. 15 50 E. S. 67 44 W.	1,548 1,392 1,157	Bowman. Bedling. Fact.
Thence along county boundary, as delineated on chart No. 26, to corner No. 2.						
2	38 20 20.70	76 51 13.00	N. 55 17 W. S. 66 14 W. S. 76 42 E.	S. 55 17 E. N. 66 13 E. N. 76 42 W.	1,132 1,660 1,132	Burr. Bowman. Fact.
3	38 20 26.26	76 50 23.58	N. 6 38 E. N. 78 29 W. S. 25 19 W.	S. 6 38 W. S. 78 29 E. N. 25 19 E.	1,402 2,289 494	Cohouck. Burr. Fact.
4	38 20 07.08	76 50 45.50	S. 84 40 W. S. 34 24 W. N. 61 47 E.	N. 84 39 E. N. 34 24 E. S. 61 47 W.	2,259 1,911 421	Bowman. Bedling. Fact.

RUSSELL.

(Middle Wicomico River—Chart No. 26.)

1	38 19 04.42	76 50 28.14	N. 78 10 E. N. 2 14 W. S. 77 22 W.	S. 78 11 W. S. 2 14 E. N. 77 22 E.	961 2,313 1,049	Farr. Fact. Gust.
Thence along county boundary, as delineated on chart No. 26, to corner No. 2.						
2	38 20 00.00	76 51 11.88	N. 88 54 W. S. 15 50 W. N. 67 44 E.	S. 88 55 E. N. 15 50 E. S. 67 44 W.	1,548 1,392 1,157	Bowman. Bedling. Fact.
3	38 20 07.08	76 50 45.50	S. 84 40 W. S. 34 24 W. N. 61 47 E.	N. 84 39 E. N. 34 24 E. S. 61 47 W.	2,259 1,911 421	Bowman. Bedling. Fact.
4	38 19 09.76	76 49 56.97	N. 81 38 E. N. 23 18 W. S. 77 32 W.	S. 81 38 W. S. 23 19 E. N. 77 31 E.	114 2,320 1,895	Farr. Fact. Gust.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MANAHOWIC CREEK.

(Middle Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 18 24.45	76 50 16.82	S. 44 40 W. S. 68 42 E. N. 22 31 E.	N. 44 39 E. N. 68 42 W. S. 22 31 W.	1,189 1,299 1,672	Hedney. Lyon. Farr.
Thence along county boundary, as delineated on chart No. 26, to corner No. 2.						
2	38 19 04.42	76 50 28.14	N. 78 10 E. N. 2 14 W. S. 77 22 W.	S. 78 11 W. S. 2 14 E. N. 77 22 E.	961 2,313 1,049	Farr. Fact. Gust.
3	38 19 09.76	76 49 56.97	N. 81 38 E. N. 23 18 W. S. 77 32 W.	S. 81 38 W. S. 23 19 E. N. 77 31 E.	114 2,320 1,895	Farr. Fact. Gust.
4	38 18 29.84	76 49 58.88	S. 51 57 W. S. 48 19 E. N. 6 50 E.	N. 51 56 E. N. 48 18 W. S. 6 50 W.	1,667 982 1,372	Hedney. Lyon. Farr.

BRAMLEIGH CREEK.

(Middle Wicomico River—Chart No. 26.)

1	38 17 26.40	76 49 42.82	S. 68 36 E. N. 11 40 E. S. 80 01 W.	N. 68 35 W. S. 11 40 W. N. 80 00 E.	1,357 1,520 1,137	Weiss. Lyon. Charles.
Thence along county boundary, as delineated on chart No. 26, to corner No. 2.						
2	38 17 55.98	76 50 08.16	N. 63 31 E. N. 83 52 W. S. 20 30 W.	S. 63 32 W. S. 83 52 E. N. 20 30 E.	1,095 1,072 1,275	Lyon. Hedney. Charles.
Thence along county boundary, as delineated on chart No. 26, to corner No. 3.						
3	38 18 24.45	76 50 16.82	S. 44 40 W. S. 68 42 E. N. 22 31 E.	N. 44 39 E. N. 68 42 W. S. 22 31 W.	1,189 1,299 1,672	Hedney. Lyon. Farr.
4	38 18 29.84	76 49 58.88	S. 51 57 W. S. 48 19 E. N. 6 50 E.	N. 51 56 E. N. 48 18 W. S. 6 50 W.	1,667 982 1,372	Hedney. Lyon. Farr.
5	38 18 14.64	76 49 36.28	N. 13 07 W. S. 74 57 W. S. 43 22 E.	S. 13 07 E. N. 74 56 E. N. 43 22 W.	1,926 1,980 194	Farr. Hedney. Lyon.
6	38 17 45.78	76 49 28.12	N. 5 45 W. S. 60 37 W. S. 37 14 E.	S. 5 45 E. N. 60 36 E. N. 37 13 W.	837 1,734 1,444	Lyon. Charles. Weiss.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WHITE POINT.

(Lower Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / ' "	° / ' "	° / ' "	° / ' "		
1	38 16 34.94	76 49 13.42	S. 50 45 E. N. 67 32 E. S. 21 15 E.	N. 50 45 W. S. 67 32 W. S. 21 15 W.	Yards. 1,442 1,791 1,330	Prec. Blakistone. Weiss.
Thence along county boundary, as delineated on chart No. 26, to corner No. 2.						
2	38 16 55.66	76 49 32.82	N. 61 31 E. N. 58 48 W. S. 37 53 W.	S. 61 32 W. S. 58 49 E. N. 37 53 E.	1,133 1,621 1,294	Weiss. Charles. Hard.
Thence along county boundary, as delineated on chart No. 26, to corner No. 3.						
3	38 17 26.40	76 49 42.82	S. 68 36 E. N. 11 40 E. S. 80 01 W.	N. 68 35 W. S. 11 40 W. N. 80 00 E.	1,357 1,520 1,137	Weiss. Lyon. Charles.
4	38 17 15.96	76 49 12.16	N. 85 26 W. S. 38 14 W. S. 72 17 E.	S. 85 26 E. N. 38 13 E. N. 72 17 W.	1,941 2,172 471	Charles. Hard. Weiss.
5	38 16 52.52	76 49 11.78	N. 34 11 E. N. 64 05 W. S. 55 52 W.	S. 34 11 W. S. 64 06 E. N. 55 52 E.	780 2,157 1,636	Weiss. Charles. Hard.
6	38 16 51.32	76 48 46.98	S. 15 44 E. N. 82 06 E. N. 17 47 W.	N. 15 44 W. S. 82 06 W. S. 17 47 E.	1,520 961 722	Prec. Blakistone. Weiss.

WHITE POINT HOLLOW.

(Lower Wicomico River—Chart No. 26.)

1	38 17 00.86	76 48 32.50	N. 58 51 W. S. 0 52 E. S. 71 32 E.	S. 58 52 E. N. 0 52 W. N. 71 31 W.	708 1,785 598	Weiss. Prec. Blakistone.
2	38 17 03.98	76 48 47.40	S. 12 37 E. S. 72 59 E. N. 38 47 W.	N. 12 37 W. N. 72 59 W. S. 38 47 E.	1,937 1,007 335	Prec. Blakistone. Weiss.
3	38 17 04.46	76 49 03.40	S. 50 06 W. S. 24 00 E. N. 41 26 E.	N. 50 05 E. N. 24 00 W. S. 41 26 W.	2,056 2,087 326	Hard. Prec. Weiss.
4	38 17 06.82	76 49 03.16	S. 48 33 W. S. 22 59 E. N. 51 47 E.	N. 48 33 E. N. 22 59 W. S. 51 47 W.	2,112 2,157 267	Hard. Prec. Weiss.
5	38 17 06.90	76 48 44.32	N. 60 53 W. S. 9 44 E. S. 65 58 E.	S. 60 54 E. N. 9 44 W. N. 65 57 W.	334 2,018 965	Weiss. Prec. Blakistone.
6	38 17 03.98	76 48 31.34	N. 67 43 W. S. 0 07 W. S. 61 13 E.	S. 67 43 E. N. 0 07 E. N. 61 13 W.	688 1,891 612	Weiss. Prec. Blakistone.

BOUNDARIES OF NATURAL OYSTER BEDS—continued.

BLAKISTONE.

(Lower Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / "	° / "	° / "	° / "	Yards.	
1	38 16 27.74	76 48 20.84	N. 15 33 E. N. 31 41 W. S. 22 57 W.	S. 15 33 W. S. 31 42 E. N. 22 57 E.	962 1,742 725	Blakistone. Weiss. Prec.
2	38 16 29.24	76 48 24.58	N. 22 08 E. N. 29 40 W. S. 14 21 W.	S. 22 09 W. S. 29 41 E. N. 14 21 E.	947 1,648 740	Blakistone. Weiss. Prec.
3	38 16 45.88	76 48 22.82	N. 44 33 E. N. 44 44 W. S. 10 13 W.	S. 44 33 W. S. 44 44 E. N. 10 13 E.	443 1,226 1,300	Blakistone. Weiss. Prec.
4	38 16 53.58	76 48 16.26	N. 67 34 E. N. 59 29 W. S. 14 44 W.	S. 67 34 W. S. 59 29 E. N. 14 43 E.	146 1,204 1,594	Blakistone. Weiss. Prec.
5	38 16 36.50	76 48 16.40	N. 12 27 E. N. 41 02 W. S. 22 36 W.	S. 12 28 W. S. 41 03 E. N. 22 35 E.	646 1,574 1,043	Blakistone. Weiss. Prec.

BLUFF POINT.

(Lower Wicomico River—Chart No. 26.)

1	38 15 19.22	76 48 48.98	S. 39 29 W. S. 15 37 E. N. 15 49 E.	N. 39 29 E. N. 15 37 W. S. 15 49 W.	2,005 515 1,707	Cobb Point Bar Light. St. Margaret 2. Prec.
2	38 15 20.00	76 49 24.36	N. 71 55 W. S. 11 59 W. S. 64 10 E.	N. 71 55 E. N. 11 59 E. N. 64 10 W.	1,589 1,609 1,200	Corner. Cobb Point Bar Light. St. Margaret 2.
3	38 16 34.94	76 49 13.42	S. 50 45 E. N. 67 32 E. N. 21 15 E.	N. 50 45 W. S. 67 32 W. S. 21 15 W.	1,442 1,791 1,330	Prec. Blakistone. Weiss.
4	38 16 51.32	76 48 46.98	S. 15 44 E. N. 82 06 E. N. 17 47 W.	N. 15 44 W. S. 82 06 W. S. 17 47 E.	1,520 961 722	Prec. Blakistone. Weiss.
5	38 16 20.28	76 48 28.06	N. 20 52 E. N. 22 39 W. S. 12 19 W.	S. 20 52 W. S. 22 39 E. N. 12 19 E.	1,262 1,879 426	Blakistone. Weiss. Prec.
6	38 16 09.07	76 48 41.46	S. 81 45 E. N. 27 22 E. N. 75 43 W.	N. 81 45 W. S. 27 22 W. S. 75 44 E.	268 1,753 2,229	Prec. Blakistone. Hard.
7	38 15 43.80	76 48 27.89	N. 6 41 W. S. 84 09 W. S. 17 40 W.	S. 6 41 E. N. 84 08 E. N. 17 40 E.	819 3,028 1,391	Prec. Corner. St. Margaret 2.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MOUTH OF RIVER.

(Lower Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "		
1	38 15 02.18	76 49 29.62	N. 51 20 W. S. 11 18 W. N. 86 20 E.	S. 51 21 E. N. 11 18 E. S. 86 20 W.	Yards. 1,752 992 1,223	Corner. Cobb Point Bar Light. St. Margaret 2.
2	38 15 20.20	76 49 35.10	N. 68 20 W. S. 1 46 W. S. 68 48 E.	S. 68 21 E. N. 1 46 E. N. 68 48 W.	1,318 1,581 1,464	Corner. Cobb Point Bar Light. St. Margaret 2.
3	38 15 20.00	76 49 24.36	N. 71 55 W. S. 11 59 W. S. 64 10 E.	S. 71 55 E. N. 11 59 E. N. 64 10 W.	1,589 1,609 1,200	Corner. Cobb Point Bar Light. St. Margaret 2.
4	38 15 19.22	76 48 48.98	S. 39 29 W. S. 15 37 E. N. 15 49 E.	N. 39 29 E. N. 15 37 W. S. 15 49 W.	2,005 515 1,707	Cobb Point Bar Light. St. Margaret 2. Prec.
5	38 15 06.02	76 49 00.28	N. 65 47 W. S. 41 29 W. S. 83 21 E.	S. 65 48 E. N. 41 29 E. N. 83 21 W.	2,353 1,472 442	Corner. Cobb Point Bar Light. St. Margaret 2.

ST. MARGARET.

(Lower Wicomico River—Chart No. 26.)

1	38 15 08.20	76 48 23.66	N. 5 54 W. S. 76 52 W. S. 37 39 E.	S. 5 54 E. N. 76 51 E. N. 37 38 W.	2,024 549 2,124	Prec. St. Margaret 2. St. Catherine.
2	38 15 14.19	76 48 38.95	N. 6 15 E. S. 48 13 W. S. 21 20 W.	S. 6 15 W. N. 48 13 E. N. 21 20 E.	1,823 2,068 351	Prec. Cobb Point Bar Light. St. Margaret 2.
3	38 15 17.70	76 48 36.38	N. 4 24 E. S. 47 06 W. S. 23 48 W.	S. 4 24 W. N. 47 06 E. N. 23 48 E.	1,608 2,108 487	Prec. Cobb Point Bar Light. St. Margaret 2.
4	38 15 11.36	76 48 21.76	N. 7 43 W. S. 68 26 W. S. 34 53 E.	S. 7 43 E. N. 68 25 E. N. 34 52 W.	1,925 629 2,181	Prec. St. Margaret 2. St. Catherine.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BULLOCK.

(Lower Wicomico River—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
			° / '	° / '		
1	38 14 29.80	76 48 29.04	S. 74 58 E. N. 18 30 W. N. 86 13 W.	N. 74 57 W. S. 18 30 E. S. 86 14 E.	Yards. 1,492 1,234 1,810	St. Catherine. St. Margaret 2. Cobb Point Bar Light.
2	38 14 31.64	76 49 04.42	S. 79 19 E. N. 26 22 E. N. 86 14 W.	N. 79 18 W. S. 26 23 W. S. 86 14 E.	2,423 1,237 866	St. Catherine. St. Margaret 2. Cobb Point Bar Light.
3	38 15 02.18	76 49 29.62	N. 51 20 W. S. 11 18 W. N. 86 20 E.	S. 51 21 E. N. 11 18 E. S. 86 20 W.	1,752 992 1,223	Corner. Cobb Point Bar Light. St. Margaret 2.
4	38 15 06.02	76 49 00.28	N. 65 47 W. S. 41 29 W. S. 83 21 E.	S. 65 48 E. N. 41 29 E. N. 83 21 W.	2,353 1,472 442	Corner. Cobb Point Bar Light. St. Margaret 2.

BULLOCK ISLAND.

(St. Catherine Sound—Chart No. 26.)

1	38 14 46.98	76 47 53.82	N. 66 01 W. S. 27 32 E. S. 85 01 E.	S. 66 02 E. N. 27 32 W. N. 85 01 W.	1,453 1,089 1,210	St. Margaret 2. St. Catherine. Sound.
2	38 14 48.06	76 47 59.66	N. 64 42 W. S. 33 19 E. S. 84 02 E.	S. 64 42 E. N. 33 19 W. N. 84 01 W.	1,297 1,200 1,368	St. Margaret 2. St. Catherine. Sound.
3	38 14 53.00	76 47 58.22	N. 72 15 W. S. 27 54 E. S. 76 51 E.	S. 72 15 E. N. 27 54 W. N. 76 52 W.	1,272 1,323 1,357	St. Margaret 2. St. Catherine. Sound.
4	38 14 52.00	76 47 52.56	N. 72 48 W. S. 22 30 E. S. 76 47 E.	S. 72 48 E. N. 22 29 W. N. 76 46 W.	1,425 1,229 1,203	St. Margaret 2. St. Catherine. Sound.

SURVEY OF OYSTER BARS, ST. MARYS COUNTY, MD.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ST. CATHERINE.

(St. Catherine Sound—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 14 26.10	76 46 59.42	N. 79 35 E. N. 22 00 W. S. 74 27 W.	S. 79 35 W. S. 22 00 E. N. 74 27 E.	534 645 979	Bailey. Sound. St. Catherine.
2	38 14 34.58	76 47 28.38	S. 17 30 W. S. 81 40 E. N. 59 25 E.	N. 17 30 E. N. 81 40 W. S. 59 25 W.	575 1,309 613	St. Catherine. Bailey. Sound.
3	38 14 41.03	76 47 23.90	S. 20 52 W. S. 70 54 E. N. 76 58 E.	N. 20 52 E. N. 70 54 W. S. 76 58 W.	819 1,245 420	St. Catherine. Bailey. Sound.
4	38 14 30.16	76 46 57.22	S. 85 02 E. N. 33 04 W. S. 68 16 W.	N. 85 02 W. S. 33 04 E. N. 68 16 E.	468 550 1,078	Bailey. Sound. St. Catherine.

HACKLEY CREEK.

(St. Catherine Sound—Chart No. 26.)

1	38 14 01.84	76 47 06.90	S. 64 45 E. N. 38 21 E. N. 53 15 W.	N. 64 45 W. S. 38 22 W. S. 53 15 E.	574 1,166 928	Waterloo. Bailey. St. Catherine.
2	38 14 11.23	76 47 18.66	S. 55 59 E. N. 60 01 E. N. 61 00 W.	N. 55 59 W. S. 60 02 W. S. 61 00 E.	1,004 1,196 493	Waterloo. Bailey. St. Catherine.
3	38 14 05.18	76 46 52.86	S. 22 09 E. N. 23 36 E. N. 68 22 W.	N. 22 09 W. S. 23 36 W. S. 68 23 E.	395 875 1,202	Waterloo. Bailey. St. Catherine.
4	38 14 02.36	76 46 53.36	S. 31 13 E. N. 22 05 E. N. 64 01 W.	N. 31 13 W. S. 22 05 W. S. 64 02 E.	306 968 1,228	Waterloo. Bailey. St. Catherine.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WATERLOO.

(St. Catherine Sound—Chart No. 26.)

Corner of bar.	Latitude.	Longitude.	True bearing.		Distance.	U. S. C. & G. S. triangulation station.
			Forward.	Back.		
	° / '	° / '	° / '	° / '	Yards.	
1	38 13 40.36	76 46 53.82	N. 19 38 E.	S. 19 38 W.	509	Waterloo.
			N. 10 21 W.	S. 10 21 E.	2,175	Sound.
			N. 40 28 W.	S. 40 29 E.	1,683	St. Catherine.
2	38 13 41.20	76 47 06.04	N. 47 43 E.	S. 47 43 W.	670	Waterloo.
			N. 1 47 W.	S. 1 47 E.	2,113	Sound.
			N. 31 30 W.	S. 31 30 E.	1,468	St. Catherine.
3	38 13 48.20	76 46 58.08	N. 52 53 E.	S. 52 53 W.	357	Waterloo.
			N. 8 25 W.	S. 8 25 E.	1,896	Sound.
			N. 43 56 W.	S. 43 57 E.	1,411	St. Catherine.
4	38 13 59.74	76 47 09.87	S. 73 47 E.	N. 73 46 W.	623	Waterloo.
			N. 39 10 E.	S. 39 10 W.	1,271	Bailey.
			N. 46 43 W.	S. 46 43 E.	913	St. Catherine.
5	38 14 01.84	76 47 06.90	S. 64 45 E.	N. 64 45 W.	574	Waterloo.
			N. 38 21 E.	S. 38 22 W.	1,166	Bailey.
			N. 53 15 W.	S. 53 15 E.	928	St. Catherine.
6	38 13 50.24	76 46 52.30	N. 41 45 E.	S. 41 45 W.	196	Waterloo.
			N. 14 24 E.	S. 14 24 W.	1,347	Bailey.
			N. 50 05 W.	S. 50 06 E.	1,476	St. Catherine.

SILVER SPRING.

(St. Catherine Sound—Chart No. 26.)

1	38 13 50.64	76 47 17.50	N. 80 35 E.	S. 80 35 W.	811	Waterloo.
			N. 37 50 E.	S. 37 50 W.	1,636	Bailey.
			N. 26 21 W.	S. 26 21 E.	1,041	St. Catherine.
2	38 14 03.76	76 47 22.22	S. 71 31 E.	N. 71 31 W.	977	Waterloo.
			N. 53 05 E.	S. 53 06 W.	1,415	Bailey.
			N. 34 27 W.	S. 34 27 E.	595	St. Catherine.
3	38 13 50.74	76 47 03.78	N. 73 27 E.	S. 73 28 W.	455	Waterloo.
			N. 26 26 E.	S. 26 26 W.	1,439	Bailey.
			N. 41 39 W.	S. 41 39 E.	1,245	St. Catherine.

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved March 4, 1909.]

AN ACT Making appropriation for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and ten, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and ten, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved June 25, 1910.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eleven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eleven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available fifteen thousand dollars.

[Act of Congress approved March 4, 1911.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and twelve, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and twelve, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, thirteen thousand dollars. * * *

[Act of the Legislature of Maryland approved April 2, 1906.]

AN ACT To establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars, and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That the following sections be, and they are hereby, added to article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis, and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie. * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section.

* * * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the said to the Clerks of the Circuit court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks shall be construed in all the courts of the State to be barren bottoms and

open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act; provided, that the said survey and report shall not be construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act.

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the survey, is as follows:

AN ACT Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or leveling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.¹ *And be it enacted*, That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses (to be by them sworn or affirmed and examined), shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

¹ Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from Second Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland, had a twofold object in view:

1. To encourage an industry in oyster culture upon the *barren bottoms* beneath the tidewaters of the State.
2. To prevent the leasing of *natural oyster bars* for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, chartered, and marked with buoys."

DEFINITION OF A NATURAL OYSTER BAR.

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoying them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the commission."

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturists, may be made to yield a greater number of oysters than they now produce."

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

The definition of a natural oyster bar which very nearly approaches a reasonable and satisfactory compromise between the views of the subject held by *oystermen* on one hand and by *oyster culturists* on the other is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Todd v. Job T. Moore.

This definition has been adopted by the Shell Fish Commission as the basis for the determination of the status of the various oyster bottoms surveyed and is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them, and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them,

and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the Act of Assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the Act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and can not be located or appropriated by any individual.

APPLICATION OF DEFINITION.

Before this definition may be of use in determining, accurately and scientifically, the status of an oyster ground, its central idea, "livelihood," must be expanded into accurately determinable factors, and these factors must be combined into a practical scheme of investigating the condition of the ground under consideration.

Stated briefly, a *livelihood* is represented by a *sum of money* obtained from the sale, at a fixed *price*, of a certain *quantity of oysters* gathered in a given time from an allotted *area of ground*.

Knowing the value of each of these factors, it becomes possible to calculate the number of oysters an oyster ground must produce per square yard in order that oystermen may secure a livelihood by working upon it.

NOTE.—The factors into which the Commission resolved the livelihood problem, the values assigned to each factor, and the scheme devised for practical use in examining and applying the definition to oyster bottoms are given in outline in their second report under the heading of the preceding extract, and in detail in their first report on pages 32 to 69.

APPENDIX C.—SUMMARY OF THE PARTICULAR SURVEYING OPERATIONS WHICH CONSTITUTE AN "OYSTER SURVEY" AS NOW BEING CARRIED ON IN MARYLAND.

Explanation.—A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest practical accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Triangulation survey.—Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a framework or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

Topographic survey.—The technical records which establish the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the leasable bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

Hydrographic survey.—In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture,

information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Necessary foundation for an oyster survey.—Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Special surveys and investigations pertaining to oysters.—Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations¹ making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding boat party in addition to the usual hydrographic work.² This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

The special oyster investigations³ consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

Preparation of results.—The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.⁴ This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for publication by the Government, the preparation of that part of the annual report of the Commission covering the special oyster surveys and investigations, the making of the leasing charts and finished projections, and finally the filing of the oyster charts and records with the courts and the Commission, thus opening a county for oyster culture.

Summary.—From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² See pages 104-123 of "First Annual Report of Maryland Shell Fish Commission."

³ See pages 30-67 and 129-199 of "First Annual Report of Maryland Shell Fish Commission."

⁴ No mention is made here of the large amount of administrative work of the commission, which is greatly complicated and increased by the effect of the oyster-survey operations on many thousands of people whose interests are more or less involved; or of the large amount of survey work involved in the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

APPENDIX D.—STATISTICS OF RESULTS OF THE COMBINED OYSTER SURVEY OPERATIONS OF THE GOVERNMENT AND STATE.¹

Operations.	Anne Arundel County.	Somerset County.	Wicomico County.	Worcester County.	Calvert County.	Charles County.	St. Mary's County.	Total. ²
Beginning of field work.	June 20, 1906	May 2, 1907	Aug. 27, 1907	Nov. 8, 1907	May 2, 1908	Aug. 18, 1908	May 2, 1908	.....
Filing of certified charts and reports.	June 20, 1907	July 1, 1908	Dec. 1, 1908	Apr. 12, 1909	Dec. 14, 1909	Jan. 27, 1911	July 6, 1911	.....
Natural oyster bars surveyed and delineated.	91	37	15	28	41	15	124	351
Acres of natural oyster bars.	33,666	27,506	2,038	1,655	12,363	2,285	25,778	105,291
Crab bottoms surveyed and delineated.	.....	54	.....	.....	.....	.....	.....	54
Acres of crab bottoms.	.....	32,108	.....	.....	.....	.....	.....	32,108
Clam beds surveyed and delineated.	.....	3	.....	.....	.....	.....	.....	3
Acres of clam beds.	.....	506	.....	.....	.....	.....	.....	506
Boundary buoys located and planted.	362	154	53	108	140	51	513	1,390
Triangulation landmarks established.	123	86	30	48	78	42	238	509
Miles of shore line covered by triangulation.	110	125	46	95	95	32	160	587
Square miles of water covered by triangulation.	220	375	44	110	157	20	180	1,012
Miles of examination of shell bottom with chain apparatus.	369	296	58	63	250	38	400	1,474
Oyster investigation stations occupied.	440	679	162	147	667	113	1,4727	3,080
Tide stations established.	4	3	1	1	2	1	.....	19
Number of soundings over shell bottoms.	37,049	17,904	3,387	3,649	11,292	1,631	19,374	94,256
Square miles covered by soundings and chain apparatus.	58	47	3	3	30	4	57	192
Projections prepared and plotted.	9	13	2	5	8	3	15	47
Leasing charts prepared.	13	12	2	3	5	2	10	43
Oyster charts published.	4	6	2	3	5	1	8	26
Reports published.	2	2	2	2	2	2	2	9
Progress maps published.	2	2	2	2	2	2	2	9

¹ These statistics do not include the large amount of triangulation, topography, and hydrography resulting from previous work of the Coast and Geodetic Survey, which was utilized in the preparation of the published oyster charts and records. Work in Baltimore, Kent, Queen Anne, Talbot, and Dorchester Counties has been finished, but final statistics of results will not be published until these counties are opened for oyster culture.

² Less quantities covered by statistics of more than one county.

³ Total area of natural oyster bars of Connecticut is 5,770 acres.

COAST AND GEODETIC SURVEY
PROGRESS MAP
 ST MARYS COUNTY
 MARYLAND

1908

To accompany report of work of United States Coast and Geodetic Survey, in connection with the Maryland State Fish Commission

Landmarks (see Part I, Survey Triangulation Stations)
 Survey stations to be easily
 visible when terrestrial limits of county
 limits of survey are published by Coast and Geodetic Survey

Scale, 1:100,000

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

SOMERSET COUNTY

MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND REPORT
OF WORK OF UNITED STATES COAST AND GEODETIC SUR-
VEY IN COOPERATION WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE

1908

DEPARTMENT OF COMMERCE AND LABOR

Document No. 94

COAST AND GEODETIC SURVEY

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, June 29, 1908.

SIR: I have the honor to transmit herewith the report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, and certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, and 1909.

Respectfully,

O. H. TITTMANN, *Superintendent.*

To Hon. OSCAR S. STRAUS,
Secretary of Commerce and Labor.

CERTIFICATION.

ANNAPOLIS, MD., *June 25, 1908.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in the waters of Somerset County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,

*Chief of Coast and Geodetic Survey Party,
Assistant, Coast and Geodetic Survey.*

ANNAPOLIS, MD., *June 25, 1908.*

Examined and certified to be correct.

WALTER J. MITCHELL,

CASWELL GRAVE,

BENJAMIN K. GREEN,

Maryland Shell Fish Commissioners.

SWEPPSON EARLE,

Hydrographic Engineer.

NOTE.—As required by law, certified copies of this publication and of the charts of the natural oyster bars of "Somerset County and adjacent waters" were filed in the office of the clerk of the circuit court of Somerset County and in the office of the Board of Shell Fish Commissioners, at Annapolis, on July 1, 1908.

CONTENTS.

	Page.
PROGRESS MAP	Follows 118
LETTER OF SUBMITTAL	4
CERTIFICATION	5
INTRODUCTION:	
Publications	13
Cooperation of the Coast and Geodetic Survey	14
Cooperation of the Bureau of Fisheries	14
General remarks	14
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions	16
Organization	17
Equipment	17
Chronological statement of work	17
Statistics	18
General statement	19
CHARTS AND MAPS:	
Charts of natural oyster bars	20
Leasing charts	22
Projections	22
Progress maps	23
BOUNDARIES OF COUNTY WATERS:	
Waters within territorial limits of county	23
Waters contiguous to county	24
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation of descriptions of triangulation stations	25
Descriptions of triangulation stations—	
<i>Chart No. 5</i> (upper end of Tangier Sound and Wicomico River)—	
Senator (see also Charts Nos. 6 and 7)	27
Crab	28
Sharkfin Shoal Light	28
Head	28
Frog	29
Cow	29
Nanticoke Church	30
Roar	30
Nanti	30
White	31
Ella	31
Holland	32
Child	32
Creek	32

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.	Page.
Descriptions of triangulation stations—Continued.	
Chart No. 5 (upper end of Tangier Sound and Wicomico River)—Continued.	
End.....	33
Walnut.....	33
Jones.....	34
Ivee.....	34
Mount Vernon Church.....	35
Ball.....	35
Wind.....	35
Little.....	35
Dove.....	36
Great Shoals Light.....	36
Short.....	37
Room.....	37
Haines.....	37
Deal Island Church.....	38
Bar (see also Chart No. 7).....	38
Jean (see also Chart No. 7).....	39
Sandy (see also Chart No. 7).....	39
Chart No. 6 (Chesapeake Bay west of Kedge and Holland straits)—	
Holland Island Bar Light.....	39
Senator (see also Charts Nos. 5 and 7).....	27
Solomons Lump Light (see also Chart No. 7).....	39
Fog.....	39
Joseph (see also Chart No. 8).....	40
Chart No. 7 (Middle Tangier Sound and tributaries)—	
Terrapin.....	40
Solomons Lump Light (see also Chart No. 6).....	39
Miles.....	41
Senator (see also Charts Nos. 5 and 6).....	27
Bar (see also Chart No. 5).....	38
Joshua.....	41
Kelley.....	41
Marsh.....	42
St. Pierre.....	42
Jean (see also Chart No. 5).....	39
Sandy (see also Chart No. 5).....	39
Locust.....	42
Fitz (outside limits of chart; see progress map).....	43
Wab (outside limits of chart; see progress map).....	43
Pen (outside limits of chart; see progress map).....	43
Cox.....	43
Green.....	44
Barn.....	44
Cupola.....	44
Staff.....	44
Fairmount Church.....	44
Prickly.....	45
Has.....	45
Ford.....	45
Moon.....	45
Colburn.....	46
Geog.....	46
Flat Cap.....	46

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Page.

Descriptions of triangulation stations—Continued.

Chart No. 8 (Chesapeake Bay west of Smith Island)—

Smith Point Light.....	47
Joseph (see also Chart No. 6).....	49
North Church (Smith Island).....	47
Old Church (Smith Island).....	47
Ewell Church (Smith Island).....	47
Shanks Hammock	47

Chart No. 9 (lower end of Tangier and Pocomoke sounds)—

Reach Hammock.....	48
Fishbone.....	48
Horse.....	49
Janes Island Light.....	49
Somers Cove Light.....	49
Emmanuel Church.....	49
Mount Pleasant Church	49
Asbury Church.....	49
Beacon.....	50
Fox Island Poplar.....	50
Sam.....	50
Watermelon Hummock.....	51
East.....	51
Monkey.....	52

Chart No. 10 (upper end of Pocomoke Sound)—

Scot.....	52
Old.....	52
Will.....	53
Cup.....	53
Summer.....	53
Oil.....	54
Wharf.....	54
Saxis Church.....	54
Mos.....	54

BOUNDARIES OF OYSTER BARS:

Explanation of descriptions of boundaries.....	55
--	----

Surveying methods for relocation of boundaries.....	56
---	----

Boundaries of natural oyster bars—

Chart No. 5 (Upper Tangier Sound and Wicomico River)—

Turtle Egg Island (see also Chart No. 7).....	59
Mud	60
Old Orchard.....	60
Haines	61
Halls Point.....	61
Rock Creek	62
Evans.....	62
Buoy.....	62
Wingate.....	63
Mount Vernon Wharf	63
Georges (see also Chart No. 7).....	64

Chart No. 6 (Chesapeake Bay west of Kedge and Holland straits)—

Southwest Middleground (see also Chart No. 8).....	65
Kedge Straits.....	65
Oyster Creek.....	65

BOUNDARIES OF OYSTER BARS—Continued.

Page.

Boundaries of natural oyster bars—Continued.

Chart No. 7 (Middle Tangier Sound and tributaries)—

Mussel Hole.....	66
Turtle Egg Island (see also Chart No. 5)	59
Chain Shoal.....	67
Piney Island West.....	67
Piney Island Swash.....	68
Georges (see also Chart No. 5)	64
Sandy Point.....	68
Cormal.....	69
Marshy Island.....	70
Drum Point.....	71
Prickly Point.....	72
Piney Island East.....	72
Harris.....	73
Big Annemessex.....	73

Chart No. 8 (Chesapeake Bay west of Smith Island)—

Southwest Middleground (see also Chart No. 6).....	65
Church Creek.....	74

Chart No. 9 (lower end of Tangier and Pocomoke sounds)—

Philibys.....	74
Great Rock.....	75
Fox Island.....	75
Stone.....	76
Watkins.....	76
Long Point.....	77

Chart No. 10 (upper end of Pocomoke Sound)—

Gunby.....	77
Marumseo.....	78
Kitts Creek West.....	78
Kitts Creek East.....	79

BOUNDARIES OF CRAB BOTTOMS:

Explanation of descriptions of boundaries	79
Surveying methods for relocation of boundaries	81

Boundaries of crab bottoms—

Chart No. 5 (Upper Tangier Sound and Wicomico River)—

Deep Banks (see also Charts Nos. 6 and 7).....	81
Holland Straits (see also Charts Nos. 6 and 7).....	82
Pungers Creek (see also Charts Nos. 6 and 7).....	82
Laws Thoroughfare North.....	83
Deal Island (see also Chart No. 7)	83
Laws Thoroughfare South (see also Chart No. 7)	84
Marsh Island (see also Chart No. 7).....	84
St. Pierre (see also Chart No. 7)	85
Geanguakin (see also Chart No. 7)	85

Chart No. 6 (Chesapeake Bay west of Kedge and Holland straits)—

Pungers Creek (see also Charts Nos. 5 and 7).....	82
Holland Straits (see also Charts Nos. 5 and 7).....	82
Deep Banks (see also Charts Nos. 5 and 7).....	81
Spring Island.....	86
Pry Cove.....	86
North Kedge Straits.....	87
Sheepshead (see also Chart No. 7).....	87
Fishing Point (see also Chart No. 7).....	88

Contents.

II

BOUNDARIES OF CRAB BOTTOMS—Continued.

Page.

Boundaries of crab bottoms—Continued.

Chart No. 6 (Chesapeake Bay west of Kedge and Holland straits)—Continued.

South Kedge Straits..... 88

Smith Island Thoroughfare (see also Charts Nos. 8 and 9)..... 89

Chart No. 7 (Middle Tangier Sound and tributaries)—

Terrapin Sand (see also Chart No. 9)..... 89

Fishing Point (see also Chart No. 6)..... 88

Sheepshead (see also Chart No. 6)..... 87

South Marsh..... 90

Pungers Creek (see also Charts Nos. 5 and 6)..... 82

Deep Banks (see also Charts Nos. 5 and 6)..... 81

Holland Straits (see also Charts Nos. 5 and 6)..... 82

Deal Island (see also Chart No. 5)..... 83

Wenona..... 90

Little Deal Island..... 91

Lower Thoroughfare..... 91

Piney Island..... 92

Laws Thoroughfare South (see also Chart No. 5)..... 84

Marsh Island (see also Chart No. 5)..... 84

St. Pierre (see also Chart No. 5)..... 85

Geanquakin (see also Chart No. 5)..... 85

Teague Creek..... 93

Goose Creek..... 93

Mine Creek..... 94

Hazard..... 94

Shark Point..... 95

Fords Wharf..... 95

Crane Cove..... 96

Moon Bay..... 96

Red Cap Creek..... 97

Miles..... 97

Colburn..... 98

Jackson Island..... 98

Jones Creek..... 99

Daugherty Creek..... 99

Tenth Point..... 100

Chart No. 8 (Chesapeake Bay west of Smith Island)—

Smith Island Thoroughfare (see also Charts Nos. 6 and 9)..... 89

Shanks Creek..... 100

Tylers Creek (see also Chart No. 9)..... 101

Chart No. 9 (lower end of Tangier and Pocomoke sounds)—

Tylers Creek (see also Chart No. 8)..... 101

Smith Island Thoroughfare (see also Charts Nos. 6 and 8)..... 89

Big Island..... 101

Drum..... 102

Terrapin Sand (see also Chart No. 7)..... 89

Old House..... 102

Light House..... 103

Cancer..... 104

Back Creek..... 104

Lavellette..... 105

Jenkins Creek..... 105

Kings Island..... 106

Great Point..... 107

BOUNDARIES OF CRAB BOTTOMS—Continued.	Page.
Boundaries of crab bottoms—Continued.	
<i>Chart No. 9</i> (lower end of Tangier and Pocomoke sounds)—Continued.	
Fishing Creek.....	107
Cedar Straits.....	108
Broad Creek.....	108
Ware Point.....	109
Apes Hole.....	110
<i>Chart No. 10</i> (upper end of Pocomoke Sound). [No crab bottoms.]	
BOUNDARIES OF CLAM BEDS:	
Explanation of descriptions of boundaries.....	110
Surveying methods for relocation of boundaries	111
Boundaries of clam beds—	
<i>Charts Nos. 5, 6, 7, and 8.</i> [No clam beds on these charts.]	
<i>Chart No. 9</i> (lower end of Tangier and Pocomoke sounds)—	
Ware Rock.....	111
Gravel Rock.....	111
Flat Rock (see also <i>Chart No. 10</i>).....	112
<i>Chart No. 10</i> (upper end of Pocomoke Sound)—	
Flat Rock (see also <i>Chart No. 9</i>).....	112
APPENDICES:	
Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.....	113
Appendix B.—Laws relating to survey of clam beds.....	116
Appendix C.—Statistics of results of the combined operations of the Government and State.....	117
Appendix D.—“The Haman Oyster Culture Law” (extract from First Report of Shell Fish Commission).....	117

SURVEY OF OYSTER BARS, SOMERSET COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars, crab bottoms, and clam beds of Maryland has been divided between the Government and the State in accordance with the laws ^a authorizing the work and the natural division of the surveying operations of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.^b The charts show all legal boundaries of oyster bars, crab bottoms, and clam beds within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report ^c of the representative of the Coast and Geodetic Survey in charge of the work of that Service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.

The part prepared and issued by the State under the direction of the Shell Fish Commission consists of an annual report ^d of all the operations of the Commission performed under the provisions of the laws of Maryland,^e including results of biological and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of sur-

^a See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

^b These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C. The publications ready for issue are those of Anne Arundel and Somerset counties. Those of Wicomico and Worcester counties are now being prepared.

^c See page 16 and the progress map attached to this publication.

^d These reports can be obtained by application to the Shell Fish Commission, Annapolis, Md. They are issued annually in October, and the first report is now available for distribution.

^e See Appendix D for an extract from the "First Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman Oyster Culture Law."

veying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the Service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an advisor in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.^a A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the Bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL REMARKS.

A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to the many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with surveying methods on open waters the necessity for the various operations performed are evident, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest attainable accuracy. To others it will be

^a Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

sufficient to state that the actual experience gained from oyster surveys in other States has proven that to accurately locate and permanently establish oyster boundaries as is now being done in Maryland is necessary if endless dissatisfaction and future litigation are to be avoided.

Such refinement of survey work as demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a framework or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

The technical records which established the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the barren bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of navigational charts.

Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations "making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms and are carried on by the sounding boat party in addition to their usual hydrographic work.^b This operation consists of a record of the character of vibration of a wire and chain apparatus which drags over the bottom. The vibrations or lack of vibrations indicating the presence or absence of shells.

The special oyster investigations^c consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important

^a See Appendix C of this publication for "Statistics of results of combined operations of the Government and State."

^b See pages 104 to 123 of "First Annual Report of Maryland Shell Fish Commission."

^c See pages 30 to 67 and 129 to 199 of "First Annual Report of Maryland Shell Fish Commission."

matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.^a This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for record and publication by the Government, the manufacture and planting of the "State buoys" at all corners of the oyster-bar boundaries, the preparation of that part of the annual report of the Commission covering the oyster investigations, the making of the leasing charts and finished projections, and finally the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY.

INSTRUCTIONS.

The two following letters, together with the laws ^b of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the Survey at Washington, has proved very beneficial to the work, and is greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,

Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His excellency Hon. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

^a No mention is made here of the large amount of administrative work of the Commission, which is greatly complicated and increased by the economic and political effect of the oyster-survey operations on many thousands of people whose interests are more or less involved.

^b For these laws see Appendix A.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the commissioners, prepare a programme of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,

U. S. C. and G. S. Steamer Endeavor, Baltimore, Md.

ORGANIZATION.

The organization of the party has remained practically unchanged and consists of the chief and the necessary triangulators, computers, and draftsmen.

EQUIPMENT.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster* the Coast and Geodetic Survey party has had the constant use of the large steam launch *Inspector* and several other boats furnished by their own Service, and the occasional use of the Bureau of Fisheries launch *Canvasback*^a and the steamer *Governor McLane*^b of the State fishery force.

The greater part of the equipment of instruments for the operations of both the Government and State have been furnished by the Coast and Geodetic Survey and consist of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.^c

On June 20, 1907, the "Charts of Natural Oyster Bars" and report^d of "Survey of Oyster Bars" for Anne Arundel County were issued and filed, and the survey records and reports for that county have been filed in the archives of the Survey at Washington.

In addition to this work, a Coast and Geodetic Survey signal-building party was engaged in the erection of triangulation signals in Somerset County from May 2 to June 25 in cooperation with a signal-building party of the Shell Fish Commission.

^a By courtesy of Dr. H. F. Moore, U. S. Bureau of Fisheries.

^b By courtesy of Capt. James A. Turner, commanding.

^c The field and office work relating to Somerset County is so intermixed with that of Wicomico County that this statement includes part of the work of the latter county.

^d See this report for an account of the work from July 3, 1906, to June 20, 1907.

From June 25 to November 6, when the field work in Somerset and Wicomico counties was practically completed, the usual routine of field and office work was followed without material interruption except that resulting from the moving of the house boat *Oyster* from Crisfield to Manokin River on July 13, then to Piney Island on August 27, and to Wicomico River, on August 30, where she remained until her removal to Nanticoke River on September 30.

From this latter date the work in Wicomico County predominated, and when the field surveys were practically completed on November 6 the entire party left by rail for Worcester County, it being impracticable to move the house boat to the waters of that locality.

At the close of the survey work in Worcester County in the last part of December, office work relating to Somerset and Wicomico counties was actively commenced at Baltimore^a and was continued without material interruption until March 23, 1908, when a subparty went to Worcester and Somerset counties to finish some details of field work in those sections required for the preparation of the technical reports and oyster charts.

The very large amount of work of computation and drafting necessary to make the results of the survey of the previous season available for publication was nearly completed on May 2, when it was transferred to the Government quarters on the house boat *Oyster*, which left Baltimore on the same day with the party and outfit for her anchorage off Solomons Island, in the Patuxent River.

The active field work in Calvert County dates from May 2, but from that time until the filing of this report and the oyster charts of Somerset County the chief of party, in addition to his regular field duties, was frequently at Baltimore and Washington to look after their final preparation for publication.

STATISTICS.^b

Landmarks and triangulation signals erected.....	60
Monuments planted to mark triangulation stations.....	61
Triangulation stations occupied for observations of horizontal angles.....	66
Old triangulation stations recovered.....	24
New triangulation stations established.....	62
Total old and new triangulation stations marked and described.....	86
Linear miles of shore line covered by triangulation (approximate).....	125
Square miles covered by triangulation (approximate).....	375
Hydrographic projections prepared and completed as records of oyster, crab, and clam boundaries.....	13
Triangles computed.....	209
Geographic positions computed.....	76

^a Office rooms were furnished for the work of the Government party in the "old court-house" and afterwards in the new custom-house by courtesy of Hon. William F. Stone, collector of customs.

^b These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of Somerset County, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland.

Corners of oyster, crab, and clam boundaries established by computation.....	506
Back azimuths and distances computed from corners of boundaries to triangulation stations....	1, 518
Descriptions of triangulation stations prepared for publication.....	86
Descriptions of oyster, crab, and clam boundaries prepared for publication.....	94
Total typewritten pages of manuscript prepared for publication of report.....	264
"Charts of Natural Oyster Bars" prepared for publication.....	6
Progress map prepared for publication.....	1

GENERAL STATEMENT.

The results obtained from the work of the Coast and Geodetic Survey in Somerset County in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need no other summary than is indicated by the published "Charts of Natural Oyster Bars" and the scheme of hydrographic projections and triangulation stations shown on the progress map at the beginning of this report.

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster survey operations.

The hydrographic projections and published charts were prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shell-fish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to by published technical descriptions which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County:"

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last sixty-five years.

In fact, when the survey of the oyster bars of Maryland is completed, it is believed that it will stand the test of time and practical use as a working foundation for whatever form the oyster legislation of the future may assume; and that the doing of the work systematically and accurately, once for all, not only means a better foundation of a great oyster industry by irradicably locating the natural oyster bars for the use of the public, but also a better and more permanent superstructure of oyster culture for the individual by the reason of the integrity of the foundation on which it stands.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore of the Bureau of Fisheries, whose efficient cooperation, well-known experience, and scientific knowledge of all matters relating to oysters have been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unflinching tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the Commission, who, as editor of the Commission's annual report and commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Benjamin K. Green, treasurer of the Commission, who has looked after the equipment and commissary of the house boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

To Thomas H. Robinson, counsel to the Commission, for courteously furnishing valuable information relating to county boundaries.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts^a of the natural oyster bars of "Somerset County and Adjacent Waters," published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, consist of a series of five sheets covering the eastern shore of Chesapeake Bay from Hooper Strait to the Maryland-Virginia boundary, including Tangier and Pocomoke sounds and numerous other tributaries. They are published on a scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inches to a statute mile) and are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars, crab bottoms, clam beds, and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the circuit court of Somerset County and in the office of the Commission at Annapolis, as required by the oyster laws of Maryland.

In addition to the oyster-bar and other boundaries, the charts show the location and name of all landmarks (U. S. Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography^b necessary to make the technical definitions and delineations of boundaries readily understandable

^a These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

^b Much of the details of the inshore topography was obtained from the excellent map of Somerset County prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the U. S. Geological Survey.

both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars, crab bottoms, and clam beds are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, as was generally the case with the crab bottoms, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars and crab bottoms, especially by those not familiar with the use of maps.

The corners of the oyster bars, crab bottoms, and clam beds are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, crab bottoms, or clam beds, as the case may be, these points have two or more numbers, each number corresponding to the bar, bottom, or bed in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the headings of "Boundaries of natural oyster bars," "Boundaries of crab bottoms," and "Boundaries of clam beds."

The landmarks, oyster bars, crab bottoms, and clam beds have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a particular bar, bottom, bed, or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be indicated. To find the name of a bar, bottom, bed, or landmark which is only known by location, consult the progress map at the beginning of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar, bottom, bed, or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shell-fish industries. The 1-fathom contour (6 feet) corresponds in a general way to the outer limits of the crab bottoms, while the waters outside of this curve and inside the 5-fathom contour (30 feet) practically include all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with Somerset County are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars, crab bottoms, and clam beds were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the

Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart and are usually located within the boundaries of the different areas.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Somerset County, like those for Anne Arundel County, have been prepared under the direction of the hydrographic engineer of the Commission. These charts are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey. They are made on the scales of 1 part in 5,000 or 1 part in 10,000, as the needs of oyster culture may require. Anne Arundel County required 13 leasing charts and Somerset County 12 to cover their oyster bottoms.

These charts show all the oyster bars, crab bottoms, and, clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to area under consideration, and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as practicable.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in Annapolis.

PROJECTIONS.

The polyconic projections^a covering Somerset County waters are 13 in number and on the scale of 1 part in 10,000. They were all constructed by draftsmen of the Coast and Geodetic Survey, who also plotted the sextant positions on the smooth projections which determine the location of the legal boundaries of the oyster bars, crab bottoms, or clam beds as delineated by the Shell Fish Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the office of the Shell Fish Commission at Annapolis.

^a For the scheme of these projections see the progress map at the beginning of this publication.

PROGRESS MAPS.

The progress map to be found at the beginning of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the U. S. Coast and Geodetic Survey in Somerset County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress map^a accompanying the "First Annual Report of the Maryland Shell Fish Commission" was prepared under the direction of the hydrographic engineer of the Commission. It is on the scale of 1 part in 400,000 and shows the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey of Maryland.

BOUNDARIES OF COUNTY WATERS.^b

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line^c between the waters "within the territorial limits" of Somerset County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Commencing at a point defined by the intersection of the channels of Wicomico Creek and Wicomico River; thence with the channel of Wicomico River along the boundary line as laid down on Chart No. 5 of the "Natural Oyster Bars" of Maryland, published by the Coast and Geodetic Survey, to a point defined by the intersection of the channel of Nanticoke River with Wicomico River; thence in a straight line to a point defined by ^d latitude 38° 11' 50" 3, and longitude 75° 58' 20."8, situated in upper end of

^a This map and report can be obtained by application to Maryland Shell Fish Commission, at Annapolis, Md.

^b For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, Superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

^c See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the beginning of this publication.

^d Latitudes and longitudes based on the United States standard datum of the U. S. Coast and Geodetic Survey.

Tangier Sound, about $\frac{3}{8}$ mile ^a east-southeast of Sharkfin Shoal Light, $2\frac{1}{2}$ miles south of western extremity of Clay Island, and $1\frac{3}{4}$ miles west-northwest of Halls Point; thence in a straight line along the channel of Tangier Sound to a point defined by latitude $38^{\circ} 10' 08''.1$, and longitude $75^{\circ} 58' 40''.6$, situated about $2\frac{3}{8}$ miles south by east of Sharkfin Shoal Light and $1\frac{5}{8}$ miles west of upper land end of Deal Island; thence in a straight line across Tangier Sound to a point defined by latitude $38^{\circ} 08' 50''.6$, and longitude $76^{\circ} 01' 53''.4$, situated on a point of land on the southeastern extremity of Bloodworth Island, which is the north point of the Tangier Sound entrance to Holland Straits; thence in a straight line across Holland Straits to a point defined by latitude $38^{\circ} 06' 39''.9$, and longitude $76^{\circ} 03' 17''.8$, situated on northwest extremity of a small island slightly detached from South Marsh and on north side of Holland Straits entrance to Pry Cove; thence in a straight line to a point defined by latitude $38^{\circ} 05' 44''.1$, and longitude $76^{\circ} 03' 44''.6$, situated on Pry Island, which is located on south side of Holland Straits entrance to Pry Cove; thence in a straight line to the open waters of the Chesapeake Bay at point defined by latitude $38^{\circ} 04' 40''.8$, and longitude $76^{\circ} 04' 14''.8$, situated at junction of Holland and Kedge straits; thence in a straight line along the dividing waters of Chesapeake Bay and Kedge Straits to a point defined by latitude $38^{\circ} 02' 07''.0$, and longitude $76^{\circ} 02' 34''.0$, situated on the northwest side of Fog Point, which is the south point of the Chesapeake Bay entrance to Kedge Straits; thence along the mean low water line of the Chesapeake Bay shore of Smith Island across the mouth of all inlets less than 100 yards in width to a point defined by latitude $38^{\circ} 00' 31''.0$, and longitude $76^{\circ} 03' 08''.9$, situated on a point at the extreme northwest entrance to Smith Island Thoroughfare; thence in a straight line across the Chesapeake Bay entrance of Smith Island Thoroughfare and Goose Harbor Cove to a point defined by latitude $37^{\circ} 59' 30''.0$, and longitude $76^{\circ} 03' 09''.6$, situated on a point at the extreme southwest entrance to Goose Harbor Cove; thence along the mean low water line of Chesapeake Bay shore of Smith Island across the mouth of all inlets less than 100 yards in width to the intersection of the mean low water line and the Maryland-Virginia boundary line; thence in a straight line with the Maryland-Virginia boundary across Smith Island and the waters of Smith Gut, Shanks Creek, and Tyers Creek to a point at a corner of the boundary near the Tangier Sound shore of Smith Island situated on land known locally as Horse Hummock; thence in a straight line with the Maryland-Virginia boundary to point at a corner of the boundary in the middle of Tangier Sound, situated about $1\frac{7}{8}$ miles southwest by west of James Island Light, $2\frac{3}{4}$ miles east by south of Horse Hummock, and $3\frac{1}{4}$ miles northwest of House Island; thence in a straight line with the Maryland-Virginia boundary to a point at a corner of the boundary in the middle of Tangier Sound, situated about $4\frac{3}{8}$ miles southwest by south of James Island Light, $3\frac{7}{8}$ miles southeast by east of Horse Hummock, and $2\frac{5}{8}$ miles west of House Island; thence in a straight line with the Maryland-Virginia boundary across House Island to a corner of the boundary situated in the water between Watkins Point and Green Harbor Island; thence in a straight line with the Maryland-Virginia boundary to a corner of the boundary situated in the middle of Pocomoke Sound about $4\frac{1}{2}$ miles east of Watkins Point and $2\frac{5}{8}$ miles south of Watkins Island off entrance to Apes Hole Creek; thence in a straight line with the Maryland-Virginia boundary to a corner of the boundary situated in the middle of Pocomoke Sound about $2\frac{1}{4}$ miles northwest by west of Saxis Church, $2\frac{1}{2}$ miles east by south of Watkins Island off entrance to Apes Hole, and 2 miles southwest of extreme end of point between East and Marumseo creeks; thence with the Maryland-Virginia boundary as laid down on "Charts of Natural Oyster Bars" No. 10 along the middle of Pocomoke Sound and Pocomoke River as far as oysters grow.

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the U. S. Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Annapolis," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for the

^a Statute miles.

leasing with Somerset County, a boundary line between the waters contiguous to but not within the territorial limits of Somerset County and the waters contiguous to but not within the territorial limits of adjacent counties has been established by the Shell Fish Commission. This boundary line^a has been delineated on the "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and is technically described and defined as follows:

Commencing at a point defined by latitude $38^{\circ} 04' 40''.8$, and longitude $76^{\circ} 04' 14''.8$, situated on line of territorial limits of county at junction of Holland and Kedge straits; thence in a straight line across waters of Chesapeake Bay to Holland Island Bar Light, the location of which is defined by latitude $38^{\circ} 04' 07''.3$, and longitude $76^{\circ} 05' 45''.9$; thence in a straight line across waters of Chesapeake Bay to a point defined by latitude $38^{\circ} 04' 34''.8$, and longitude $76^{\circ} 12' 01''.0$, situated near the middle of Chesapeake Bay, on northwestern end of a shoal marked by a red buoy of the U. S. Light-House Establishment situated about $5\frac{5}{8}$ miles west by north of Holland Island Bar Light, $7\frac{1}{8}$ miles east by north of Point Lookout Light, and $13\frac{1}{2}$ miles north of Smith Point Light; thence in a straight line with the waters of Chesapeake Bay to a point on Smith Point defined by the corner of the Maryland-Virginia boundary at the intersection of the straight line boundary across Chesapeake Bay and the low-water line of the southern shore of Potomac River; thence with the Maryland-Virginia boundary in a straight line across Chesapeake Bay to the point defined by the intersection of the boundary with the mean low-water line of the Chesapeake Bay shore of Smith Island; thence with territorial limits of county along the Chesapeake Bay shore of Smith Island and waters of entrance to Kedge Straits to point of beginning.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION OF DESCRIPTIONS OF LANDMARKS.

The oyster laws of Maryland authorizing the surveys to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of locations of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking to find a landmark has only an indefinite idea of its location.

^a See progress map at the end of this publication

They then gradually proceed from general descriptions of the surroundings of a landmark to the specific details of the character of the center and reference markings. An examination of the descriptions themselves will best indicate the method followed.

The heading of each description is the name by which the landmark or triangulation station is known and designated in all work and records of the Government and State.

Under the heading of "Locality" the first paragraph gives a description of the general locality of the landmark and the serial number of the published "Chart of Oyster Bars" of Maryland which best shows its location. The published charts are on the large scale of 1 part in 20,000, and show the location of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Under the same heading of "Locality" the second paragraph furnishes the description of the immediate locality of the landmark and refers to the bearing and distance of standard cement monument marking the reference station, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached.

Under the heading of "Marks" a description is given of the character of the markings of the "observed station" and the reference station. It will be noted that, although the "observed station" is the one "occupied" and "observed on" for horizontal angles, and also the one whose geographic position is computed, frequently it is not marked as well as the reference station, and in many instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate these stations on edges of banks and ends of points of land, which in Chesapeake Bay and tributaries generally means that they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the necessity of reference marks, if the frequent reestablishment of a new framework of triangulation is to be avoided.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom, the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

It is the expectation that the reference stations,^a the character of which is explained above, will be used in many cases in the near future in the place of the "observed sta-

^a To obtain the geographic positions of any of the "observed stations" or of the "reference stations," application should be made to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

tions." This has been made possible by the careful measurements of direction and distance of these stations from the "observed station," which are recorded under the heading of "References."

Under the heading of "References" are given the directions and distances of all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or reference station when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described. Its direction is taken as being $0^{\circ} 00' 00''$, and the direction of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing ^a of the initial object is always given in parenthesis alongside the name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by compass bearings or for the relocation of corner buoys of oyster-bar boundaries by the method of horizontal angles described in this publication under the heading of "Boundaries of oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of direction with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

SENATOR.

Locality.—Western shore of Tangier Sound, on southern side of Holland Straits and on extreme northeast point of South Marsh. (See Charts Nos. 5, 6, and 7.)

Observed station is on marsh land about 35 yards from north side and about 30 yards from east side of point. Myrtle bushes skirt shore, commencing due north, and two small pools of water are near station, one due south about 10 yards and the other southwest about 5 yards. No permanent reference points near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	'	"	
"Sharkfin Shoal Light" (N $16^{\circ} 20'$ E)-----	00	00	00	4¾ miles.
Chimney on house to right of "Haines"-----	31	30	--	4¾ miles.
Left-hand chimney of crab house on Deal Island-----	50	19	--	3½ miles.
Right end of large oyster house on Deal Island-----	81	59	--	3½ miles.
Lone pine tree-----	301	35	--	1⅞ miles.

^a The mean magnetic variation for Somerset County for 1908 was $5^{\circ} 30'$ west of north and increasing at the rate of $3'$ yearly.

CRAB.

Locality.—Upper end and western shore of Tangier Sound on eastern side of Bloodsworth Island about $2\frac{3}{4}$ miles southeast of Sharkfin Shoal Light House and about halfway between Piney Island Cove to north and Great Cove to south. (See Chart No. 5.)

Observed station is about 15 yards from high-water mark to the northeast and about 35 yards from the shore to the east. A small flat-roof crab house stands about 80 yards to the north-northeast and another crab house about twice the distance in the same direction.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Sharkfin Shoal Light" (N $45^{\circ} 25'$ E)-----	00	00	00	----- $2\frac{3}{4}$ miles.
Left end of large white house near Stump				
Point-----	6	11	--	----- $7\frac{7}{8}$ miles.
End of roof of white house on bluff-----	31	36	--	----- $6\frac{1}{4}$ miles.
End of Deal Island wharf-----	53	03	--	----- $3\frac{3}{4}$ miles.
Large white house near red roof one-----	72	35	--	----- $4\frac{1}{4}$ miles.
Aspen tree near "Joshua"-----	88	06	--	----- $5\frac{1}{2}$ miles.
Tall pine tree-----	165	00	40	----- $1\frac{1}{2}$ miles.
Near end of flat-roof shanty-----	288	32	--	----- 80 yards.
Flag pole on Brown's crab house-----	299	01	--	----- 150 yards.

SHARKFIN SHOAL LIGHT.

Locality.—Northern end of Tangier Sound about equally distant from entrances of Hooper Strait, Fishing Bay, and Nanticoke River. (See Chart No. 5.)

Marks.—Observed station is center point of black lantern on hexagonal screw pile known as "Sharkfin Shoal Light."

References.—

	o	'	"	
"Great Shoals Light" (N $81^{\circ} 45'$ E)-----	00	00	00	----- $5\frac{7}{8}$ miles.

HEAD.

Locality.—Upper end of Tangier Sound, on southern part of peninsula known as "Bishops Head," situated between Hooper Strait and Fishing Bay. (See Chart No. 5.)

Observed station is on eastern side marsh land about $\frac{1}{2}$ mile north of extreme southerly end of Bishops Head and about 15 yards east of two crab houses. It is about 15 yards southwest of high-water mark, behind water bushes which skirt the shore. Cement monument marking reference station is 13.41 meters west from observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Sharkfin Shoal Light" (S $60^{\circ} 41'$ E)-----	00	00	00	----- $2\frac{3}{4}$ miles.
Crab-house flagstaff-----	50	30	--	----- $3\frac{3}{4}$ miles.
Large pine-----	97	42	--	----- 2 miles.
REFERENCE STATION-----	139	55	40	----- 13.41 meters.
Near gable of $2\frac{1}{2}$ -story white house-----	140	24	--	----- $\frac{1}{4}$ mile.
Chimney on white house-----	156	44	--	----- $\frac{3}{8}$ mile.
Left side of crab house-----	166	38	--	----- 17.31 meters.
Right side of crab house-----	199	54	--	----- 16.11 meters.
Chimney on yellow house-----	208	28	--	----- $1\frac{1}{2}$ miles.
Chimney on end of white house-----	238	53	--	----- 3 miles.
Right side of Nanticoke Point woods-----	326	56	--	----- $7\frac{1}{2}$ miles.

FROG.

Locality.—West shore of mouth of Nanticoke River, on the southeasterly point of Clay Island, known as "Frog Point." (See Chart No. 5.)

Observed station is on a marsh point about 25 yards back from extreme end of point, 20 yards from the east side and 25 yards from the west side. Water bushes around back of station. There are no permanent reference objects near station. Cement monument marking reference station is 13.10 meters north of observed station.

Marks.—Observed station is nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Sharkfin Shoal Light" (S 41° 25' W) -----	00	00	00	3 $\frac{1}{8}$ miles.
Left tangent of Clay Island -----	35	17	--	1 $\frac{1}{4}$ miles.
REFERENCE STATION -----	141	45	50	13.10 meters.
Right tangent of Sandy Point -----	177	41	--	$\frac{3}{4}$ mile.
Chimney on white house with black roof --	179	12	--	2 $\frac{1}{2}$ miles.
Chimney on near end of large red-roof				
white house -----	183	02	--	2 $\frac{1}{2}$ miles.
Stack on canning house -----	184	36	--	2 $\frac{1}{2}$ miles.
Land end of Nanticoke wharf -----	184	36	--	2 $\frac{1}{2}$ miles.
End of Nanticoke wharf house -----	186	00	--	2 $\frac{1}{4}$ miles.
Chimney on ell end of main part of large				
red-roof white house -----	211	27	--	2 $\frac{1}{4}$ miles.
Right tangent of Nanticoke Point woods --	238	44	--	2 $\frac{3}{4}$ miles.
Large square chimney on white house				
(Dames Quarter) -----	264	17	--	4 miles.
Rock Creek poplar tree -----	284	17	--	3 $\frac{1}{2}$ miles.
Flagstaff on Deal Island wharf -----	322	09	--	4 $\frac{3}{4}$ miles.

COW.

Locality.—Western shore Nanticoke River on Mink Point about $\frac{1}{4}$ mile east of entrance to Cow Creek. (See Chart No. 5.)

Observed station is on a very soft marsh point at the outer edge of water bushes about 5 yards back from the shore to the east, 15 yards from extreme end of point to the southeast, and 15 yards from the shore to the southwest. No permanent reference objects near station. Cement monument marking reference station is 8.68 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Frog" (S 6° 13' W) -----	00	00	00	2 miles.
A shanty -----	37	16	--	$\frac{3}{4}$ mile.
REFERENCE STATION -----	129	19	20	8.68 meters.
White shanty -----	189	53	--	1 mile.
A shanty -----	209	52	--	$\frac{1}{2}$ mile.
Tangent of land -----	217	43	--	$\frac{1}{2}$ mile.
Large red roof greenhouse -----	236	48	--	2 $\frac{1}{2}$ miles.
Windmill -----	243	52	--	2 $\frac{3}{4}$ miles.
Gambrel of house -----	244	13	--	2 $\frac{1}{2}$ miles.
Chimney of large greenhouse -----	254	24	--	2 $\frac{1}{4}$ miles.
Canning house stack -----	257	28	--	1 $\frac{3}{4}$ miles.
Canning house stack -----	275	26	--	1 $\frac{1}{2}$ miles.
Near corner of Nanticoke wharf -----	284	49	--	1 $\frac{1}{2}$ miles.
Large red roof white house -----	297	32	--	2 $\frac{1}{2}$ miles.
Large red roof white house -----	299	24	--	2 $\frac{1}{2}$ miles.
Right tangent of Nanticoke woods -----	310	15	--	3 miles.
Left tangent of Sandy Point -----	341	48	--	1 $\frac{1}{4}$ miles.

NANTICOKE CHURCH.

Locality.—Eastern shore of Nanticoke River in town of Nanticoke, about $\frac{1}{4}$ mile back from river and $\frac{3}{4}$ mile northeast of Roaring Point. (See Chart No. 5.)

Marks.—Observed station is center point of spire of church known as "Nanticoke Methodist Episcopal Church."

References.—None necessary.

ROAR.

Locality.—Eastern shore of Nanticoke River on point of land known as Roaring Point, and about $\frac{1}{4}$ mile north from outer end of Roaring Point wharf. (See Chart No. 5.)

Observed station is 30 yards to the east of the extreme end of the point and on a sandy knoll about 5 feet above high-water mark. It is about 20 yards back from high-water mark on the north side and about 40 yards back from high-water mark on south side of the point. Pine woods stand about 150 yards inshore from station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Frog" (S 39° 02' W)-----	00	00	00	2½ miles.
Two shanties-----	19	17	--	2 miles.
One shanty-----	30	20	--	1¾ miles.
A shanty-----	71	32	--	1¼ miles.
White shanty-----	98	53	--	1¾ miles.
Barn steeple-----	117	41	--	4½ miles.
White shanty behind "Okay"-----	121	25	--	2¾ miles.
Red roof house-----	144	42	--	7½ miles.
Twin trees on Ragged Point-----	159	30	--	2 miles.
Chimney on white house-----	175	23	--	1½ miles.
Windmill-----	184	04	--	1 mile.
Gambrel roof house-----	184	32	--	1 mile.
White canning house stack-----	195	11	--	½ mile.
Land end of wharf-----	271	58	--	¾ mile.
Large house-----	293	38	--	1½ miles.
Right tangent of Nanticoke Point woods-----	297	22	--	2½ miles.
Right tangent of Nanticoke wharf-----	304	52	--	¾ mile.
Left tangent of Sandy Point-----	359	51	--	1¾ miles.

NANTI.

Locality.—Eastern side of entrance to Nanticoke River about $\frac{1}{2}$ mile northwest of Nanticoke Point. (See Chart No. 5.)

Observed station is on grassy land about 2 feet above and 20 yards back from high-water mark. It is about midway between edge of woods on Nanticoke Point and unpainted house near poplars $\frac{1}{4}$ mile to the north.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 65° 14' W)-----	00	00	00	5 miles.
Tangent of Sandy Point-----	51	33	--	2¾ miles.
Left end of Nanticoke wharf-----	89	45	--	2 miles.
Near chimney of red roof house-----	96	51	--	¾ mile.
Chimney of unpainted house-----	101	08	--	¾ mile.
Near chimney of house nearest woods-----	116	56	--	¾ mile.
Tree high above woods-----	119	53	--	2½ miles.
Right end of heavy woods-----	134	03	--	1¼ miles.
Right end of scant woods-----	147	11	--	¾ mile.

	o	'	"	
Wild cherry tree.....	178	24	.	50 yards.
Left end of woods.....	227	46	--	$\frac{1}{4}$ mile.
Right end of woods.....	269	45	--	$\frac{1}{4}$ mile.
Poplar tree Dames Quarter.....	307	28	--	$2\frac{3}{4}$ miles.
Tangent of Haines Point.....	330	55	--	$4\frac{1}{2}$ miles.

WHITE.

Locality.—Eastern shore of entrance to Nanticoke River on western part of Nanticoke Point. (See Chart No. 5.)

Observed station is on a sand and grass point about 2 feet above high-water mark, 3 yards from the west side, 15 yards from the south end, and 20 yards from southeast side. Dense pine woods stand about 100 yards to the northwest, open marsh to the northeast, and a clump of about a dozen pine trees in marsh about $\frac{3}{8}$ mile to the northeast. There is a cove about 40 yards east of the station and another point of land about 100 yards to the southeast. Cement monument marking reference station is 16.63 meters north of observed station.

Marks.—Observed station is a nail in a pine stub about 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Great Shoals Light" (S 44° 16' E).....	00	00	00	$1\frac{1}{4}$ miles.
Poplar tree at Dames Quarter.....	65	08	--	$2\frac{1}{2}$ miles.
Tangent of Hall Point.....	86	06	--	$3\frac{3}{4}$ miles.
Tangent of Sandy Point.....	164	17	--	3 miles.
Left end of pine woods.....	172	27	--	100 yards.
Right end of pine woods.....	213	21	--	150 yards.
REFERENCE STATION.....	227	29	00	16.63 meters.
Largest tree in clump of about 12 pines.....	247	23	--	$\frac{3}{8}$ mile.
Chimney on cabin on Ellis Point.....	279	05	--	2 miles.
White house.....	311	54	--	$\frac{1}{2}$ mile.
Point of land.....	335	02	--	100 yards.

ELLA.

Locality.—North shore of Wicomico River on point at east side of entrance to Ellis Bay. (See Chart No. 5.)

Observed station is on a marsh point about 1 foot above high-water mark. It is about 10 yards back from the shore to the west, 20 yards back from the shore to the south, and 20 yards back from the shore to the north. No permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Great Shoals Light" (S 9° 49' W).....	00	00	00	2 miles.
Tangent of land on Mollies Point.....	5	14	--	1 mile.
Watch house.....	26	10	--	$\frac{1}{2}$ mile.
Left of woods on Nanticoke Point.....	44	23	--	$1\frac{1}{2}$ miles.
Right of woods on Nanticoke Point.....	52	33	--	$1\frac{1}{4}$ miles.
Chimney of white house.....	135	45	--	2 miles.
Chimney of gray house.....	142	43	--	2 miles.
Chimney of white house.....	249	27	--	200 yards.
Mount Vernon Church.....	257	58	--	$2\frac{1}{4}$ miles.
Chimney on middle of white house.....	274	28	--	$1\frac{1}{4}$ miles.
Chimney on cream and brown house.....	290	49	--	1 mile.
Chimney on brown house.....	291	03	--	1 mile.
Smoke pipe of watch house.....	306	57	--	1 mile.

Survey of Oyster Bars, Somerset County, Md.

HOLLAND.

Locality.—North shore of Wicomico River on Holland Point about $1\frac{1}{4}$ miles west of Mount Vernon Church, and $1\frac{1}{4}$ miles east of Ellis Bay. (See Chart No. 5.)

Observed station is on a marsh point about 20 yards north of high-water mark on its extreme end and about 100 yards west of a creek. A small cabin stands about 200 yards to the west.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Wind" (S 28° $35'$ W).....	00	00	00	$1\frac{1}{4}$ miles.
Great Shoals Light.....	4	34	--	$2\frac{3}{4}$ miles.
Tangent of Mollies Point.....	18	39	--	2 miles.
Left tangent of woods on Nanticoke Point....	34	33	--	$2\frac{3}{4}$ miles.
Right tangent of woods on Nanticoke Point....	39	28	--	$2\frac{3}{4}$ miles.
Chimney of house near Ellis Bay.....	46	19	--	$1\frac{1}{4}$ miles.
Chimney of cabin.....	56	14	--	200 yards.
Chimney on left end of large red roof building..	91	56	--	3 miles.
Large chimney on white house.....	188	31	--	$1\frac{1}{4}$ miles.
Chimney of slate-colored house.....	230	43	--	$1\frac{1}{4}$ miles.
Chimney on middle of light-blue house.....	240	48	--	1 mile.
Chimney on $2\frac{1}{2}$ -story light-green house.....	266	41	--	$\frac{3}{4}$ mile.
Right chimney on white house.....	317	29	--	$\frac{1}{2}$ mile.

CHILD.

Locality.—North shore of Wicomico River about $\frac{3}{8}$ mile north of Mount Vernon Church. (See Chart No. 5.)

Observed station is on marsh land about 2 feet above and 15 yards back from high-water mark. There is an old wharf about 300 yards to the east and at a point about 100 yards to the north, two creeks join and form a single creek about 20 feet wide which flows into the river at a point about 15 yards west of observed station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Mount Vernon Church" (S 10° $15'$ E).....	00	00	00	$\frac{7}{8}$ mile.
Chimney on white house in woods on opposite shore.....	3	23	--	$\frac{3}{4}$ mile.
Chimney on white house on sand bluff on opposite shore.....	15	32	--	$\frac{5}{8}$ mile.
Smoke pipe on large white house.....	19	55	--	$\frac{3}{4}$ mile.
Chimney on brown house.....	48	14	--	$1\frac{1}{2}$ miles.
Great Shoals Light.....	49	33	--	$3\frac{3}{4}$ miles.
Tangent of Holland Point.....	62	44	--	$1\frac{1}{4}$ miles.
Fork of creek.....	183	08	--	100 yards.
Chimney of large house.....	206	39	--	2 miles.
Chimney of another large house.....	238	43	--	$\frac{3}{4}$ mile.
Mount Vernon wharf smoke pipe.....	293	12	--	$1\frac{1}{2}$ miles.
Large white house in woods.....	324	03	--	$\frac{3}{4}$ mile.
Cream-colored house in woods.....	345	47	--	$\frac{1}{2}$ mile.

CREEK.

Locality.—North shore of Wicomico River, about $\frac{3}{4}$ mile northwest of Mount Vernon wharf and about $1\frac{1}{8}$ miles northeast of Mount Vernon Church. (See Chart No. 5.)

Observed station is on a marsh grass and sand point making out to the south and about 10 yards from the high-water mark of each of the three sides of the point. About 10 yards west of observed station is the mouth of a creek or drain 10 feet wide which runs only a short distance inland. There are several unpainted houses within 200 yards of observed station and a lone pear tree stands about 200

yards to the north. There is a cultivated field about 150 yards back of station which extends to edge of woods $\frac{1}{4}$ mile distant.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Mount Vernon Church" (S 30° 39' W).....	00	00	00	1 $\frac{3}{4}$ miles.
Chimney on light-blue house with red blinds.....	13	46	--	1 $\frac{1}{4}$ miles.
Lone tree.....	72	59	--	1 mile.
Chimney of old unpainted house.....	108	18	--	300 yards.
Chimney of light-green trimmed house.....	135	15	--	200 yards.
Pear tree.....	159	48	--	200 yards.
Left chimney of cream-colored house.....	218	06	--	300 yards.
Tangent of cove.....	224	--	--	30 yards.
Smoke pipe on Mount Vernon wharf.....	282	34	--	$\frac{3}{4}$ mile.
Chimney outside yellow house.....	312	04	--	$\frac{5}{8}$ mile.
Chimney on slate-colored house.....	352	57	--	$\frac{3}{4}$ mile.

END.

Locality.—North shore of Wicomico River, opposite Mount Vernon wharf. (See Chart No. 5.)

Observed station is on marsh land about 3 feet above and about 100 yards north of high-water mark in river and about 75 yards to the northwest of a large creek which runs about 2 miles inland. Water bushes skirt shore around station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Jones" (S 60° 33' W).....	00	00	00	$\frac{3}{4}$ mile.
Chimney on white house.....	7	24	--	1 mile.
Tangent of land.....	12	28	--	1 mile.
Near chimney of cream-colored house.....	68	25	--	$\frac{1}{2}$ mile.
Cupola on red barn.....	155	21	--	$\frac{3}{4}$ mile.
Old-style windmill.....	163	26	--	$\frac{3}{4}$ mile.
Chimney of Whitehaven Hotel.....	171	09	--	1 $\frac{1}{4}$ miles.
Webster's canning house.....	252	28	--	$\frac{1}{2}$ mile.
Right hand chimney on gray house.....	273	42	--	$\frac{1}{2}$ mile.
Left side of Mount Vernon wharf.....	294	13	--	$\frac{1}{4}$ mile.
Stack of Dashiell's canning house.....	304	52	--	$\frac{3}{8}$ mile.
Middle attic window of white house.....	328	54	--	$\frac{1}{2}$ mile.
Chimney outside of yellow house.....	352	12	--	$\frac{1}{2}$ mile.

WALNUT.

Locality.—South shore of Wicomico River, about 175 yards east of Mount Vernon wharf. (See Chart No. 5.)

Observed station is on marsh land about 17 feet from shore and 50 yards west of a small creek. Several large walnut and locust trees stand about 250 yards south of station and 2 houses and 2 sheds about 250 yards to the southwest.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Jones" (S 83° 49' W).....	00	00	00	$\frac{3}{4}$ mile.
Right side of Mount Vernon wharf house.....	17	18	--	175 yards.
Chimney outside of white house.....	46	52	--	1 mile.
Left chimney of gabled house.....	53	47	--	1 mile.
Old style windmill.....	121	00	--	$\frac{1}{2}$ mile.
Left end of roof of Whitehaven wharf.....	136	18	--	1 $\frac{1}{2}$ miles.
Chimney of Whitehaven Hotel.....	136	40	--	1 $\frac{1}{2}$ miles.
Opening between pair of pine trees near Whitehaven.....	140	--	--	1 $\frac{1}{2}$ miles.

Survey of Oyster Bars, Somerset County, Md.

	°	'	"	
Stack of Webster's canning house.....	187	38	---	300 yards.
Opening between two walnut trees.....	274	--	---	200 yards.
Chimney of Whitlock's house.....	307	37	---	250 yards.
Stack of Dashiell's canning house.....	352	23	---	400 yards.

JONES.

Locality.—South shore of Wicomico River about $\frac{3}{4}$ mile west of Mount Vernon wharf. (See Chart No. 5.)

Observed station is on a knoll about 25 feet above and 30 yards to south of high-water mark, and about 200 yards to the east of a cove. The knoll on which the station is located is the highest point on the shore in this locality. Several small cabins stand to the northward about 25 yards, and a large lone cedar tree about 35 yards to the southwest.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Ivee" (S 78° 54' W).....	00	00	00	$\frac{3}{4}$ mile.
Large square chimney on four-gable house.....	10	05	---	$\frac{1}{4}$ mile.
Cedar tree.....	11	22	---	25 yards.
Tangent of point of land.....	34	54	---	$\frac{1}{8}$ mile.
Nail in blaze in cedar tree.....	62	26	---	20.30 meters.
Chimney on light-green house on opposite shore.....	102	33	---	$\frac{3}{4}$ mile.
White cupola in Whitehaven.....	148	53	---	2 $\frac{1}{4}$ mile.
Old style windmill.....	153	31	---	1 $\frac{1}{2}$ miles.
Whitehaven Hotel chimney.....	155	48	---	2 $\frac{1}{4}$ miles.
Large chimney on yellow house.....	178	37	---	$\frac{1}{4}$ mile.
Chimney on end of brown house.....	216	37	---	$\frac{1}{2}$ mile.
Chimney on white house.....	266	42	---	$\frac{1}{4}$ mile.
Weeping willow.....	307	55	---	$\frac{1}{4}$ mile.
Nail in blaze in cedar tree.....	318	30	---	31.10 meters.

IVEE.

Locality.—Southeast shore of Wicomico River about $\frac{1}{4}$ mile northwest of Mount Vernon Church (See Chart No. 5.)

Observed station is on grass land about 1 foot above and 10 feet back from high-water mark. A small cove makes in about 100 yards east of station. A small lone pine stands about 110 yards to the east-southeast, and a sand bluff with pine trees about 100 yards to the southwest. Beyond the woods along the beach is a bluff 15 feet high upon which are several houses.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Mount Vernon Church" (S 22° 37' E)---	00	00	00	$\frac{3}{8}$ mile.
White house chimney.....	55	35	---	$\frac{1}{4}$ mile.
Chimney on end of white house.....	209	55	---	2 miles.
Chimney of green-trimmed house near "Creek".....	245	28	---	1 $\frac{1}{4}$ miles.
Old style windmill.....	264	47	---	2 $\frac{1}{8}$ miles.
Slate-colored house.....	276	22	---	$\frac{1}{2}$ mile.
Chimney on middle of white house beyond woods.....	297	11	---	1 mile.
Lone pine tree.....	317	53	---	110 yards.

MOUNT VERNON CHURCH.

Locality.—Southeast side of Wicomico River about $\frac{3}{8}$ mile back from the shore $1\frac{1}{2}$ miles south-west of Mount Vernon wharf. (See Chart No. 5.)

Observed station is on main road in Mount Vernon and is situated on the highest point in the vicinity.

Marks.—Observed station is center of steeple of Mount Vernon Methodist Church.

References.—None necessary.

BALL.

Locality.—Southeast shore of Wicomico River on a point of land about 1 mile northeast of Wingate Point. (See Chart No. 5.)

Observed station is on a sand and grass point making out about 100 yards west of a sand bluff. A small creek empties into the river about 10 yards to the east, and three poplars stand about 100 yards to the south. The extreme northern end of the point is about 35 yards from station and the western side is about 10 yards.

Marks.—Observed station is center point of triangle on standard cement monument

References.—

	o	'	"	
"Holland" (N 20° 03' W).....	00	00	00	$\frac{1}{2}$ mile.
Middle one of five pines.....	107	09	--	100 yards.
Chimney on John Withlock's house.....	137	57	--	100 yards
Left end of pine woods.....	145	33	--	$\frac{1}{2}$ mile.
Right end of pine woods.....	165	04	--	$\frac{1}{2}$ mile.
Chimney on white house.....	183	32	--	$\frac{1}{4}$ mile.
Third poplar.....	209	04	--	100 yards.
Chimney of brown house.....	248	27	--	$\frac{1}{2}$ mile.

WIND.

Locality.—Southeast shore of Wicomico River about $\frac{1}{4}$ mile north of southern end of Wingate Point. (See Chart No. 5.)

Observed station is about 30 yards from high-water mark of Wicomico River on the north side and 20 yards from the west side. An oyster watchhouse stands about 100 yards to the east of the station

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Great Shoals Light" (S 36° 29' W).....	00	00	00	$1\frac{1}{2}$ miles.
Tangent of Mollies Point.....	33	35	--	1 mile.
Left end of woods.....	46	12	--	$1\frac{3}{4}$ miles.
Right end of woods.....	51	45	--	$1\frac{3}{4}$ miles.
Tangent of Ellis Point.....	102	47	--	1 mile.
White house in woods.....	157	19	--	3 miles.
Smoke pipe on watchhouse.....	185	49	--	100 yards.
Chimney of brown house.....	203	38	--	$\frac{1}{2}$ mile.
Chimney of cream-colored house with brown trimmings.....	215	34	--	$\frac{1}{2}$ mile.
Watchhouse.....	308	41	--	$\frac{1}{4}$ mile.
Chimney on $2\frac{1}{2}$ -story house.....	342	18	--	3 miles.
Chimney on end of white house Dames Quarter.....	350	57	--	$2\frac{1}{2}$ miles.

LITTLE.

Locality.—Southern shore of Monie Bay on second prominent point of marsh about $\frac{1}{4}$ mile to the west of entrance to Little Monie Creek. (See Chart No. 5.)

Observed station is on a marsh point covered with water bushes and reeds. It is about 1 foot above high-water mark, 7 yards from the west side, 10 yards from the east side, and about 50 yards from extreme end of point. No permanent reference objects near station.

Survey of Oyster Bars, Somerset County, Md.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Great Shoals Light" (S 83° 43' W).....	00	00	00	2¼ miles.
Left side of woods on Nanticoke Point.....	19	34	--	3¼ miles.
Right side of woods on Nanticoke Point.....	22	24	--	3½ miles.
Tangent of Wingate Point.....	34	39	--	1½ miles.
Chimney on red roof white house.....	60	13	--	1½ miles.
Chimney on near end of white house with brown trimmings	62	02	--	1½ miles.
Chimney on red roof white house with green blinds.....	62	43	--	1½ miles.
Left chimney of yellow house trimmed white..	79	52	--	1½ miles.
Middle of woods.....	80	--	--	1¾ miles.
Large brown house.....	93	55	--	1¾ miles.
Mount Vernon Church.....	102	42	--	1¾ miles.
Tangent of point of land.....	165	47	--	¼ mile.
Tangent of point of land.....	320	16	--	75 yards.
Tangent of land.....	346	47	--	3 miles.

DOVE.

Locality.—South shore of Monie Bay and about ¼ mile east of entrance to Pigeon Creek. (See Chart No. 5.)

Observed station is on marsh land about 10 yards back from high-water mark not far from water bushes which stand to the east. Cement monument marking reference station is 13.98 meters southeast from observed station. No permanent reference objects near station.

Marks.—Observed station is a nail in pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Great Shoals Light" (N 57° 41' W)	00	00	00	1¼ miles.
Left side of Nanticoke Point woods.....	6	56	--	2¾ miles.
Left side of Roaring Point heavy woods...	19	29	--	5 miles.
High lone pine showing above woods.....	23	36	--	5 miles.
Tangent of Wingate Point.....	52	52	--	2 miles.
Chimney of red roof house.....	67	39	--	2 miles.
Chimney on yellow house with red gable roof.....	84	12	--	3 miles.
Mount Vernon Church.....	86	37	--	3¼ miles.
Tangent of land.....	106	38	--	300 yards.
REFERENCE STATION.....	202	35	50	13.98 meters.
Chimney of white house with dark red trimmings.....	245	21	--	1¼ miles.

GREAT SHOALS LIGHT.

Locality.—Middle of entrances to Monie Bay and Wicomico River about halfway between Long Point to the south and Mollies Point to the north. (See Chart No. 5.)

Marks.—Observed station is center of black lantern on square screw pile structure known as "Great Shoals Light."

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 81° 50' W).....	00	00	00	5¾ miles.

SHORT.

Locality.—Southern shore of entrances to Monie Bay and Wicomico River on Long Point and about 1 mile south-southwest from Great Shoals Light. (See Chart No. 5.)

Observed station is on a sandy knoll on eastern side of entrance to Dames Quarter Creek about 15 feet back from high-water mark on the north side and about 30 feet from east side of point. It is on the highest part of the knoll which is about 5 feet above high-water mark.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 89° 03' W)----	00	00	00	5 $\frac{3}{8}$ miles.
Tile pipe in cement ("Long " 1901)-----	23	57	45	63.703 meters.
Nanticoke wharf-----	67	57	----	4 $\frac{1}{8}$ miles.
Left side of Nanticoke woods-----	69	13	----	2 miles.
Yellow house with red blinds-----	74	53	----	3 $\frac{1}{2}$ miles.
Left tangent of Wingate Point-----	124	13	----	2 $\frac{3}{4}$ miles.
Chimney on red roof white house-----	132	39	----	3 miles.
Near chimney of yellow house-----	136	40	----	3 miles.
Chimney on red trimmed house-----	212	49	----	2 miles.
Left tree at Dames Quarter-----	260	37	----	$\frac{1}{4}$ mile.
Chimney on white barn-----	279	45	----	300 yards.
Left chimney on white house-----	320	05	----	200 yards.
Chimney on yellow house-----	341	35	----	200 yards.

ROOM.

Locality.—Upper end and eastern shore of Tangier Sound on Halls Point. (See Chart No. 5.)

Observed station is on a bluff 15 feet high about 5 yards back from its edge. It is about 25 yards east of a clump of mulberry trees and about 15 yards north-northwest of a barn. Locust and mulberry trees stand all about station and locust bushes along the edge of the bluff. A wagon trail runs parallel to the shore about 15 yards back of station. Cement monument marking reference station is 21.45 meters south-southwest of observed station and almost in line with a large mulberry tree.

Marks.—Observed station is nail in center of stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (N 70° 00' W)----	00	00	00	2 $\frac{1}{2}$ miles.
Gable on near side of red roof on white house on Bishop's Head-----	3	01	----	5 $\frac{1}{2}$ miles.
Near end of roof of large 2 $\frac{1}{2}$ -story house--	12	53	----	7 $\frac{1}{4}$ miles.
Left tangent of Clay Island-----	39	18	----	3 $\frac{1}{2}$ miles.
Left side of Sandy Point woods-----	70	08	----	4 miles.
Roaring Point wharf-----	85	22	----	5 miles.
Near chimney on end of large red roof white house-----	94	36	----	4 $\frac{1}{4}$ miles.
Right side of Nanticoke woods-----	110	28	----	3 $\frac{3}{4}$ miles.
Mount Vernon Church-----	127	18	----	7 miles.
Near corner of barn-----	137	06	----	15.96 meters.
Right hand corner of barn-----	152	08	----	18.11 meters.
REFERENCE STATION-----	268	30	00	21.45 meters.
Large cedar tree-----	276	30	----	100 yards.
Two-inch iron pipe-----	279	38	30	9.21 meters.

HAINES.

Locality.—Upper end and eastern shore of Tangier Sound on Haines Point, about $\frac{5}{8}$ mile north of Deal Island Wharf. (See Chart No. 5.)

Observed station is on sand and grass point about 20 yards back and 5 feet above high-water mark. Locust and water bushes stand about 20 yards to the north and the left edge of this clump is about on

line with Sharkfin Shoal Light. A barbwire fence runs 3 yards east of station. Cement monument marking reference station is 9.64 meters east of observed station.

Marks.—Observed station is nail in pine stub in center of a drain tile with top broken off below surface. Reference station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"Sharkfin Shoal Light" (N 45° 58' W)-----	00	00	00	2½ miles.
Left of bushes.....	39	57		20 yards.
Left of Sandy Point woods.....	53	38		4¾ miles.
Chimney of 2½-story white house trimmed with red.....	75	04		½ miles.
Chimney of unpainted house.....	85	49		350 yards.
Chimney on end of red cottage trimmed white.....	99	00		¾ mile.
REFERENCE STATION.....	123	40	40	9.64 meters.
Pine tree.....	148	37	30	2.14 meters.
Large square chimney on red house.....	152	49		400 yards.
Right one of 5 large pines.....	184	40		300 yards.
Half way between chimneys on store on Deal Island.....	213	08		¾ mile.
Deal Island Church.....	217	00		1½ miles.
Black gum tree.....	223	49		6.70 meters.
Right end of Deal Island wharf.....	234	10		½ mile.
Hooper Straits Light.....	343	34		7½ miles

DEAL ISLAND CHURCH.

Locality.—Deal Island on main road about ¼ mile from the shore and about ¾ mile south of, Laws Thoroughfare. (See Chart No. 5.)

Marks.—Observed station is center of steeple on Deal Island Methodist Church.

References.—None necessary.

BAR.

Locality.—Eastern shore of Tangier Sound on western side of Deal Island, about 1 mile northwest of entrance to Lower Thoroughfare and ½ mile south of Middle Creek. (See Charts Nos. 5 and 7.)

Observed station is about 10 yards east of high-water mark on sand and grass land back of sandy beach. The first of many tree stumps which are submerged at high water commence about 100 yards to the north and cat-tails grow abundantly back of station. Cement monument marking reference station is 6.09 meters east of observed station.

Marks.—Observed station is a nail in pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"Sharkfin Shoal Light" (N 19° 40' W)-----	00	00	00	4½ miles.
Tangent of Haines Point.....	27	29		2½ miles.
Flag pole on large building on Deal Island wharf.....	28	45		2 miles.
Middle chimney of large gray building.....	37	41		1 mile.
Chimney on white house.....	59	54		400 yards.
Middle chimney on red roof white house.....	79	51		¾ mile.
REFERENCE STATION.....	107	10	00	6.09 meters.
Chimney on white house.....	118	43		400 yards.
Chimney on dark gray house.....	161	57		300 yards.
Right chimney on white four-gabled house with red roof.....	176	39		1½ mile.

JEAN.

Locality.—Northern shore of Manokin River on a marsh point on the west side of entrance to Geanquakin Creek. (See Charts Nos. 5 and 7.)

Observed station is on low marsh land about 35 yards back from extreme end, 30 yards from east side and 40 yards from north side of point. Pine woods stand about $\frac{1}{8}$ mile back from station. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Fairmount Church" (S 39° 13' E).....	00	00	00	3 $\frac{3}{8}$ miles.
Chimney on cabin standing near two others. 145	48	--	--	$\frac{3}{4}$ mile.
Left end of cabin in woods..... 238	05	--	--	1 $\frac{1}{4}$ miles.
Chimney of William Muir's store..... 301	07	--	--	1 $\frac{1}{4}$ miles.
Cupola on barn ("Barn")..... 324	58	--	--	2 $\frac{5}{8}$ miles.
Chimney of house near "Staff"..... 358	45	--	--	1 $\frac{1}{4}$ miles.

SANDY.

Locality.—Northern shore of Manokin River on point of land known as Sandy Point opposite Fishing Island. (See Charts Nos. 5 and 7.)

Observed station is on a sandy point about 5 feet above and 10 yards back from high-water mark on south side of point and about 75 yards from high-water mark on west side. A sandy beach is building out to southward and a heavy clump of myrtle bushes extends from a point about 25 yards west to a point about 75 yards west.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Fairmount Church" (S 7° 54' E).....	00	00	00	2 $\frac{1}{4}$ miles.
Bell tower on oyster house ("Cupola").....	30	58	50	$\frac{3}{8}$ mile.
Flag staff on oyster house ("Staff").....	65	43	50	1 $\frac{1}{8}$ miles.
Chimney on William Muir's store..... 137	42	--	--	$\frac{3}{4}$ mile.
Chimney on store cabin 196	18	.	.	$\frac{5}{8}$ mile.
Right end of roof..... 254	03	--	--	1 mile.
Cupola on barn ("Barn")..... 307	15	40	--	$\frac{3}{4}$ mile.

HOLLAND ISLAND BAR LIGHT.

Locality.—Easterly side of Chesapeake Bay off entrance to Kedge Straits, about 2 $\frac{3}{4}$ miles south of Holland Island, 2 $\frac{1}{2}$ miles southwest of South Marsh, and 3 $\frac{3}{4}$ miles northwest of Smith Island. (See Chart No. 6.)

Marks.—Observed station is center point of black lantern on hexagonal screw pile structure known as "Holland Island Bar Light."

References.—

	o	'	"	
"Solomons Lump Light" (S 72° 06' E).....	00	00	00	4 $\frac{3}{4}$ miles.

SOLOMONS LUMP LIGHT.

Locality.—Kedge Straits about $\frac{1}{2}$ mile north of Smith Island and about 1 $\frac{1}{2}$ miles south of South Marsh. (See Charts Nos. 6 and 7.)

Marks.—Observed station is center of black lantern on square tower on northerly side of a caisson and octagonal structure known as "Solomons Lump Light."

References.—

	o	'	"	
"Janes Island Light" (S 42° 12' E).....	00	00	00	7 $\frac{3}{8}$ miles.

FOG.

Locality.—Eastern shore of Chesapeake Bay and southern shore of Kedge Straits on northwest point of Smith Island known as "Fog Point." (See Chart No. 6.)

Observed station is on the north side of a sand and grass point about 1 foot above high-water and about 65 yards from extreme end of point to northeast and 6 yards south-southeast from shore. The

remains of old "Fog Point Light House" are about 50 yards to west-southwest, and myrtle bushes abound on all sides except on the west side, which is a sandy beach. Cement monument marking reference station is 15.26 meters south from observed station and about in line with a lone cherry tree $\frac{1}{4}$ mile distant.

Marks.—Observed station is nail in center of tile pipe with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"Solomons Lump Light" (N 59° 22' E)---	00	00	00	1 $\frac{3}{4}$ miles.
Tangent of point of land-----	13	08	---	$\frac{3}{4}$ mile.
Large tree near two smaller ones-----	22	41	---	1 $\frac{1}{2}$ miles.
Lone pine tree-----	89	28	---	1 mile.
REFERENCE STATION-----	121	18	30	15.26 meters.
Large lone cherry tree-----	121	26	---	$\frac{1}{4}$ mile.
First one of two trees-----	133	43	---	$\frac{1}{2}$ mile.
Old light-house foundation-----	193	47	---	50 yards.
First tree on Holland Island-----	272	37	---	5 $\frac{3}{4}$ miles.

JOSEPH.

Locality.—Eastern shore of Chesapeake Bay and western side of Smith Island, about 3 miles south-west from Solomons Lump Light and about $\frac{1}{2}$ mile north of entrance to Smith Island Thoroughfare (See Charts Nos. 6 and 8.)

Observed station is on marsh land about 30 yards back from edge of sandy shore. There is nothing but marsh grass for $\frac{1}{4}$ mile on all sides except a slough about 30 yards wide, which begins about 60 yards southeast of observed station and runs south to Smith Island Thoroughfare. Cement monument marking reference station is 38.74 meters northeast of station and is nearly on line with Solomons Lump Light.

Marks.—Observed station is nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"Solomons Lump Light" (N 40° 47' E) --	00	00	00	3 miles.
REFERENCE STATION-----	00	13	55	38.74 meters.
Tall lone tree-----	20	42	---	1 $\frac{1}{4}$ miles.
Right-hand one of two pines-----	58	35	---	$\frac{1}{2}$ mile.
Right end of slough-----	69	43	---	60 yards.
Smith Island North Church-----	103	33	---	1 $\frac{1}{2}$ miles.
Gable on front of 2 $\frac{1}{2}$ -story house-----	109	28	---	1 $\frac{1}{4}$ miles.
"Smith Island Old Church"-----	128	01	---	3 $\frac{1}{2}$ miles.

TERRAPIN.

Locality.—Western shore of Tangier Sound on extreme northeast point of Smith Island, known as "Terrapin Sand Point." (See Chart No. 7.)

Observed station is on the northeast side of a marsh point about 50 yards west of the extreme end and 35 yards southwest of high-water mark on northeast side. A clump of myrtle bushes stands on point about 150 yards southwest of the station. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"James Island Light" (S 37° 40' E)-----	00	00	00	4 $\frac{5}{8}$ miles.
Left end of myrtle bushes-----	65	13	---	150 yards.
Smith Island Church-----	80	25	---	4 miles.
Lone tree to right of another tree-----	85	23	---	7 miles.
Solomons Lump Light-----	169	20	---	3 $\frac{3}{8}$ miles.
Point of this island-----	214	03	---	150 yards.

MILES.

Locality.—Western shore of Tangier Sound on eastern side of the lower half of South Marsh. (See Chart No. 7.)

Observed station is on a marsh point making out about 75 yards south of entrance to small creek, which is middle one of three on this shore of the island. Station is about 50 yards south of the north side and about 60 yards west of extreme end of point. A row of myrtle bushes stands east of the station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	"	
"Sharkfin Shoal Light" (N 8° 33' E)	00	00	00	7½ miles.
Deal Island Church	29	26	--	5¼ miles.
End of roof of white house among trees, Deal Island	33	48	--	4¼ miles.
Tangent of near point of land	155	35	--	¼ mile.
Solomons Lump Light	178	56	55	3¼ miles.
Third (first large) tree from left	231	57	--	⅔ mile.
Lone pine tree	330	27	--	4¼ miles.

JOSHUA.

Locality.—Eastern shore of Tangier Sound on western side of Little Island, about ⅓ mile southeast from extreme eastern point of island. (See Chart No. 7.)

Observed station is on northern half of a sand dune about 10 feet above and 20 feet back from high-water mark. The southern half of the sand dune is covered with bushes and scrub trees. A large aspen tree stands about ¼ mile north of the station. Cement monument marking reference station is located on low land 32.06 meters north of observed station, and is nearly on line with large aspen tree.

Marks.—Observed station is a nail in pine stub flush with ground and is likely to be disturbed by shifting of sand dune. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	"	
"Solomons Lump Light" (S 37° 41' W) ..	00	00	00	5¾ miles.
Tall pine tree on opposite shore of Tangier Sound	81	48	--	5½ miles.
Center point of square roof house on Deal Island	129	32	--	1¼ miles.
Large aspen tree	160	08	--	¼ mile.
REFERENCE STATION	160	19	20	32.06 meters.
Nail in blaze in peach tree (1½ inches in diameter)	259	40	--	30.74 meters.
Tangent point of island	290	48	--	¼ mile.

KELLEY.

Locality.—Northern shore of Manokin River on Kelley Island, which is located off point between Fishing Creek and Laws Thoroughfare just inside of entrance to Laws Thoroughfare. (See Chart No. 7.)

Observed station is on a small point making off southern side of a marsh island known as "Kelley Island." It is about 8 yards from the east side and about 12 yards from west side of point. Myrtle bushes grow about 5 yards to west and north of observed station and a crab shanty stands on northern end of island about 100 yards north from station. Cement monument marking reference station is 10.44 meters northeast of observed station.

Marks.—Observed station is center of a square wooden box with top just above ground. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	"	
"Fairmount Church" (S 70° 41' E)	00	00	00	6¼ miles.
Pine to left of two others	18	38	--	3¾ miles.
Left end of new house	23	37	--	4 miles.
Aspen tree near "Joshua"	130	32	--	2½ miles.

Survey of Oyster Bars, Somerset County, Md.

Chimney on very large white house on Deal Island.....	°	'	"	
Island.....	167	51	--	2 miles.
Crab house on Kelley Island.....	253	29	--	100 yards.
REFERENCE STATION.....	283	57	10	10.44 meters.

MARSH.

Locality.—Northern shore of Manokin River on a small marshy island on eastern side of entrance to Fishing Creek. (See Chart No. 7.)

Observed station is on southern part of a small marshy island about 25 feet from the south side, 30 feet from the northeast side, and 10 feet from west side of the island. Cement monument marking reference station is 24.34 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub in center of square wooden box. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Fairmount Church" (S 64° 47' E).....	00	00	00	4 7/8 miles.
Pine to the left of two other pines.....	31	45	--	2 3/4 miles.
Right side of house on Deal Island.....	143	10	--	2 1/2 miles.
REFERENCE STATION.....	222	22	20	24.34 meters.
Chimney of cabin in woods.....	306	37	--	2 1/2 miles.
Right-hand end of crab house.....	336	22	--	3/4 mile.

ST. PIERRE.

Locality.—Manokin River on a small marsh island known as "St. Pierre Island." (See Chart No. 7.)

Observed station is on west side of island about 20 yards from the shore to the west and about 30 yards from the shore to the south. A clump of myrtle bushes stand about 15 yards northwest of station, and the shore of a small bay is about 30 yards to the east. Cement monument marking reference station is 7.97 meters east-southeast of observed station and on line to "Fairmount Church."

Marks.—Observed station is a nail in pine stub in center of square wooden box. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Fairmount Church" (S 59° 49' E).....	00	00	00	3 3/8 miles.
REFERENCE STATION.....	00	00	00	7.97 meters.
Chimney on house with two ells.....	57	15	--	1 3/4 miles.
Pine tree to the left of two others.....	58	52	--	2 miles.
Left end of roof of white house.....	61	09	--	1 7/8 miles.
Left end of crab house near Muddy Cove....	188	14	--	1 3/4 miles.
Chimney on cabin.....	258	54	--	1 1/4 miles.
Chimney on Muir's store.....	301	22	--	2 1/4 miles.
Right-hand chimney on yellow house.....	313	44	--	4 miles.

LOCUST.

Locality.—Western shore of upper Manokin River, about 1/4 mile north of Locust Point. (See Chart No. 7.)

Observed station is on marsh land about 12 yards west from shore of river and about 12 yards north from a small creek. Myrtle bushes extend alongside of river and creek. There are no other permanent reference marks near station.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Barn" (S 12° 48' E).....	00	00	00	7/8 mile.
Bell cupola on oyster house ("Cupola").....	52	35	--	1 mile.
Chimney on white house.....	219	20	--	5/8 mile.
Chimney on cabin near "Wab".....	244	22	--	1 1/4 miles.
North chimney on brick house ("Pen").....	267	04	--	1 mile.
Chimney of cabin near "Cox".....	287	22	--	5/8 mile.

FITZ.

Locality.—Northwestern shore of upper Manokin River, about 1 mile northeast from Locust Point. (See Progress Map.)

Observed station is on the edge of the lawn of a large old red brick house owned by Mr. Fitzgerald, about 4 yards west of shore and 23 yards southwest of extreme end of point. Four locust trees, each 8 inches in diameter, stand back of station, and there is a cobblestone about 12 inches in diameter about 2 yards to the east. There is a small pond 20 yards to the north of the station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Fairmount Church" (S 10° 50' W)-----	00	00	00	3 $\frac{3}{8}$ miles.
Bell cupola on oyster house ("Cupola")---	29	05	--	1 $\frac{5}{8}$ miles.
Chimney of white house-----	38	35	--	$\frac{1}{2}$ mile.
Nail in blaze in locust tree (8 inches diameter)-----	105	02	--	5.42 meters.
Near corner of brick house-----	139	34	--	100 yards.
Nail in blaze in locust tree (8 inches in diameter)-----	208	52	--	6.24 meters
Chimney of unpainted house-----	224	02	--	$\frac{1}{2}$ mile.
Chimney of cabin near "Wab"-----	237	52	--	$\frac{1}{2}$ mile.
North chimney on large brick house ("Pen")-----	287	58	20	$\frac{5}{8}$ mile.

WAB.

Locality.—North shore of upper Manokin River on a point on the western side of entrance to Goose Creek. (See Progress Map.)

Observed station is on a shell and marsh point about 10 feet back from both sides of point and about 3 feet above high-water mark. A small shanty stands directly west of station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Pen" (S 1° 32' E)-----	00	00	00	$\frac{1}{2}$ mile.
Left-hand corner of shanty-----	80	01	--	19.46 meters.
Next corner of shanty-----	90	58	--	18.77 meters.
Chimney of two-story unpainted house---	107	50	--	250 yards.
Lone pine-----	165	07	--	250 yards.
Chimney on middle of red roof on white house east-----	254	34	--	$\frac{1}{2}$ mile.
Easterly chimney of white house on opposite shore-----	280	15	--	$\frac{1}{2}$ mile.

PEN.

Locality.—Southeastern shore of upper Manokin River on Clifton Point. (See Progress Map.)

Observed station is northern chimney of a large 2 $\frac{1}{2}$ story, 4-gable roof, brick house belonging to Mr. Pendelton. The house is back from the river, and there are trees between it and the shore.

Marks.—Observed station is center of northern chimney on house belonging to Mr. Pendelton.

References.—None necessary.

COX.

Locality.—Eastern shore of upper Manokin River on marsh point about $\frac{3}{4}$ mile north of entrance to Back Creek. (See Chart No. 7.)

Observed station is about 15 yards east and 10 yards south of high-water mark. A small building stands in the water about 20 feet from bank to the northeast of station, and Bennett's oyster watch-house is about 15 yards east of station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Fairmount Church" (S 15° 34' W)-----	00	00	00	2¾ miles.
Cupola on barn ("Barn")-----	10	37	--	¾ mile.
Bell cupola on oyster house ("Cupola")---	43	51	--	1½ miles.
Chimney of white house-----	111	27	--	¾ mile.
West corner of roof brick of house on oppo-				
site shore near "Fitz"-----	151	33	--	¾ mile.
Cabin near "Wab"-----	189	33	--	¾ mile.
Left corner of watchhouse-----	266	45	--	17.20 meters.
Near corner of watchhouse-----	274	58	--	14.13 meters.

GREEN.

Locality.—Upper Manokin River on eastern shore about ¼ mile north of entrance to Back Creek. (See Chart No. 7.)

Observed station is on grassy land about 10 yards east of a sandy beach adjoining a marsh point, and is about 3 yards north of curve in road. Two small locust trees stand about 3 yards distant, one to the northwest and the other to the east of station. A cedar tree 10 inches in diameter stands about 10 yards to the south.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Fairmount Church" (S 18° 53' W)-----	00	00	00	2½ miles.
Left chimney of white house-----	7	59	--	¾ mile.
Cupola on barn ("Barn")-----	25	23	50	¾ mile.
Pine tree to the right of two others-----	35	50	--	4½ miles.
William Muir's store chimney-----	84	55	--	1¾ miles.
Nail in blaze on tree (3 inches diameter)--	107	01	--	3.65 meters.
Chimney on white house-----	126	11	--	¾ mile.
Tangent of point of land-----	141	18	--	100 yards.
Nail in blaze on tree (10 inches diameter).	342	09	--	8.90 meters.

BARN.

Locality.—South shore of Manokin River on prominent point of land between Wolf Trap and Back creeks. (See Chart No. 7.)

Marks.—Observed station is center point of cupola on a large red frame structure used as a barn on farm of Hershel Ford.

References.—None necessary.

CUPOLA.

Locality.—South shore of Manokin River on north end of Fishing Island. (See Chart No. 7.)

Marks.—Observed station is center point of top of bell cupola on Bennett's oyster house.

References.—None necessary.

STAFF.

Locality.—Southern shore of Manokin River on eastern side of entrance to Broad Creek, about ¼ mile southeast of Cormal Point. (See Chart No. 7.)

Marks.—Observed station is flagstaff on eastern end of roof of oyster house on Cox's wharf.

References.—None necessary.

FAIRMOUNT CHURCH.

Locality.—Town of Upper Fairmount about halfway between Manokin and Big Annemessex rivers. (See Chart No. 7.)

Marks.—Observed station is center point of steeple on Fairmount Methodist Church.

References.—None necessary.

PRICKLY.

Locality.—Eastern shore of Tangier Sound and southeastern side of entrance to Manokin River on a small point $\frac{1}{4}$ mile south of Prickly Point. (See Chart No. 7.)

Observed station is on a sandy spot about 5 feet above and 30 yards back from high-water mark on west side and about 35 yards from end of point to northwest. About 10 feet southeast of station is a clump of myrtle bushes, and 7 to 18 yards back of these is a small group of pine trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"St. Pierre" (N 17° 33' E).....	00	00	00	3 $\frac{1}{2}$ miles.
Pine tree to left of two others.....	26	54	--	1 $\frac{1}{2}$ miles.
Chimney of gray house.....	39	22	--	$\frac{1}{4}$ mile.
Pointed cupola on building through trees.....	49	54	--	$\frac{3}{4}$ mile.
Near end of roof of house.....	52	25	--	1 mile.
Nail in blaze in tree.....	68	03	--	19.69 meters.
Left end of white house.....	93	46	--	1 $\frac{1}{4}$ miles.
Left end of roof of yellow house.....	101	01	--	$\frac{3}{4}$ mile.
Nail in blaze in tree.....	125	29	--	23.07 meters.
Chimney on gray house on next point.....	163	02	--	$\frac{5}{8}$ mile.
Tangent of point of land.....	332	04	--	$\frac{1}{8}$ mile.

HAS.

Locality.—Eastern shore of Tangier Sound on point at north side of entrance to Big Annemessex River about halfway between Porpoise Point and Two Mouth Creek. (See Chart No. 7.)

Observed station is on a sand dune about 10 feet above and 30 yards back from high-water mark to the west. A pool averaging 40 feet by 100 feet stands 50 feet east of observed station. Cement monument marking reference station is 5.21 meters east of observed station and about on line to Fords wharf.

Marks.—Observed station is a nail in a pine stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Solomons Lump Light" (S 84° 12' W)---	00	00	00	7 $\frac{3}{4}$ miles.
Tangent of point of land.....	12	02	--	$\frac{1}{8}$ mile.
Chimney of house among trees.....	92	10	--	1 $\frac{3}{8}$ miles.
Right end of white house roof.....	117	54	--	2 miles.
Chimney on large unpainted house.....	129	46	--	$\frac{3}{4}$ mile.
REFERENCE STATION.....	179	11	45	5.21 meters.
Tower on Odd Fellows Building, Crisfield.....	265	50	--	5 $\frac{3}{8}$ miles.

FORD.

Locality.—North shore of Big Annemessex River on south side of Jerico Marshes just east of Muddy Creek. (See Chart No. 7.)

Observed station is chimney on roof of oyster house near Fords wharf. Chimney is a little east of middle of roof.

Marks.—Observed station is center of chimney on roof of oyster house.

References.—None necessary.

MOON.

Locality.—North shore of Big Annemessex River on point between Moon Bay and Crane Cove. (See Chart No. 7.)

Observed station is on a marsh point about 35 yards from extreme end, 25 yards from east side and 30 yards from south side. A small pool stands about 10 yards south of observed station and a crescent-shaped pool about 10 feet wide and 100 feet long extends from a point about 20 yards west to a point about 20 yards north of station. A row of small myrtle bushes begins at a point directly south of

observed station, extends along shore toward the east, and ends at Moon Bay. Another lot of small myrtle bushes begins at a point about 100 yards west of observed station and extends along the shore to the west. There are no other points of reference near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Ford" (N 75° 41' W).....	00	00	00	1½ miles.
Eastern end of cabin roof.....	59	06	--	1½ miles.
Chimney on cabin.....	83	12	--	1¾ miles.
Chimney on cabin.....	85	44	--	1¾ miles.
Peak of center gable of red roof house.....	104	45	--	2½ miles.
Near end of old 2½-story house.....	117	00	--	1½ miles.
Western chimney of square roof house.....	189	47	--	1 mile.
Eastern end of white house roof.....	202	18	--	1¼ miles.
Eastern end of roof of large barn.....	229	30	--	1 mile.
Chimney on house ("Colburn").....	262	16	--	¾ mile.
Chimney on middle of long barn.....	267	16	--	¾ mile.
Tangent of point of land.....	328	28	--	¾ mile.

COLBURN.

Locality.—South shore of Big Annemessex River on southeastern side of entrance to Colburn Creek (See Chart No. 7.)

Observed station is chimney on top of a modern several gable house. House sets alone about halfway between oyster houses to the west and a group of houses to the east.

Marks.—Observed station is center of chimney on top of modern several gabled house.

References.—None necessary.

GEOG.

Locality.—South shore of Big Annemessex River on point on east side of a square-shaped inlet about ¾ mile northeast of the entrance to Jones Creek. (See Chart No. 7.)

Observed station is on marsh land about 50 yards back from extreme end of point, about 20 yards from southeast corner of square-shaped bay and about 25 yards from east shore line. Myrtle bushes extend along shore to the east of station for about 100 yards, and reeds grow 25 yards to the north.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Has" (N 71° 44' W).....	00	00	00	2¾ miles.
Nearest end of red roof on opposite shore....	40	43	--	3¾ miles.
Pine tree to the right of two others.....	47	17	--	4¼ miles.
Chimney on oyster house ("Ford").....	57	22	--	1½ miles.
Center gable of red house.....	109	37	--	3½ miles.
Chimney on middle of dark red oyster house....	155	25	--	1 mile.

FLAT CAP.

Locality.—Eastern shore of Tangier Sound and about ½ mile south of Flat Cap Point on south side of entrance to Big Annemessex River. (See Chart No. 7.)

Observed station is on a sand dune about 10 yards back and 10 feet above high-water mark. A sandy beach extends along shore for about 100 yards in both directions and remainder of land is grassy. A slough begins at a point about 50 yards southeast of observed station and extends south. Cement monument marking reference station is 13.64 meters east of observed station.

Marks.—Observed station is a 1½-inch iron pipe with top flush with the surface of the ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Solomons Lump Light" (N 81° 14' W)....	00	00	00	7¾ miles.
Left end of roof of white house near				
Prickly Point.....	90	21	--	2½ miles.

	°	'	"	
Right end of long building in woods.....	169	09	--	2 ½ miles.
REFERENCE STATION.....	179	22	40	13.64 meters.
Tower of Odd Fellows building, Crisfield..	243	06	--	3 ½ miles.
Lone smokestack on Crisfield Ice Plant...	251	31	--	3 ¾ miles.
Fish factory stack Janes Island.....	271	36	--	4 ¼ miles.

SMITH POINT LIGHT.

Locality.—Western side of Chesapeake Bay on southern side of entrance to Potomac River and about 3 miles east by south of Smith Point. (See Chart No. 8.)

Marks.—Observed station is center point of black lantern on caisson and brick structure known as "Smith Point Light."

References.—

	°	'	"	
"Holland Island Bar Light" (N 20° 13' E).....	00	00	00	13 ¾ miles.

NORTH CHURCH (SMITH ISLAND).

Locality.—In town of Ewell on group of marsh islands known as "Smith Island." (See Chart No. 8.)

Observed station is on solid land on south shore of Smith Island Thoroughfare about 1 mile from the eastern shore of Chesapeake Bay.

Marks.—Observed station is center point of spire of church known as "Corinth Methodist Episcopal Church."

References.—None necessary.

OLD CHURCH (SMITH ISLAND).

Locality.—Western side of the group of marsh islands known as "Smith Island" on solid land about ¾ mile from the eastern shore of Chesapeake Bay and ½ mile east of upper end of Shanks Creek at Rhodes Point. (See Chart No. 8.)

Marks.—Observed station is center point of spire of church known as "Calvary Methodist Episcopal Church."

References.—None necessary.

EWELL CHURCH (SMITH ISLAND).

Locality.—In town of Tylerton near the center of the group of marsh islands known as "Smith Island" on solid land about ½ mile east of the narrowest part of waters joining Tylers Creek and Tylers Ditch. (See Chart No. 8.)

Marks.—Observed station is center point of spire of church known as "Union Methodist Episcopal Church."

References.—None necessary.

SHANKS HAMMOCK.

Locality.—Eastern shore of Chesapeake Bay on Shanks Island, which is located in Virginia about ¾ mile east of the southern end of Smith Island. (See Chart No. 8.)

Observed station is on the northeast side of the island, on low ground about ½ mile from its northern end about 70 yards back from shore and 110 yards from end of point to east. It is near the southern extremity of a hummock covered with a dense growth of scrub trees and bushes and is about 35 yards north of a pile of brick, the ruins of a house. Cement monument marking reference station is 1.43 meters southwest of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top just below the surface of the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Smith Point Light" (S 69° 16' W).....	00	00	00	8 ¾ miles.
Smith Island Corinth Church (North Church)	115	50	00	5 miles

Survey of Oyster Bars, Somerset County, Md.

	°	'	"	
Smith Island Union Church (Ewell Church).....	130	13	00	----- 3¾ miles.
Horse Hammock poplar.....	161	33	--	----- 3½ miles.
Right tangent of point.....	168	28	--	----- 110 yards.
Pine tree.....	185	39	--	----- ¾ miles.
Stove pipe on large crab house.....	207	07	--	----- 2½ miles.
"Fox Island Poplar".....	214	47	40	----- 7¾ miles.
Pile of brick, the ruins of a house.....	273	--	--	----- 35 yards.
REFERENCE STATION.....	349	06	20	----- 1.43 meters.

REACH HAMMOCK.

Locality.—South end and eastern side of Tangier Sound on Reach Hammock Island, which is located between Smith and Tangier islands about 1 mile east of Fishbone Island. (See Chart No. 9.)

Observed station is on the northeastern end of a small marshy island known as Reach Hammock and is about 5 feet from the present shore line, which is rapidly washing away. It is close to a small fish fertilizer factory which stands on the island. Cement monument marking reference station is 9.10 meters east by south of observed station.

Marks.—Observed station is the center of a 6-inch tile pipe with top flush with surface of the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fox Island Poplar" (N 77° 04' E).....	00	00	00	----- 4¼ miles.
Left corner of brick work of factory.....	85	07	--	----- 6.68 meters.
Right corner of brick work.....	97	12	--	----- 7.31 meters.
Near corner of shed.....	109	03	--	----- 18.32 meters.
REFERENCE STATION.....	169	02	30	----- 9.10 meters.
Chimney of small house.....	185	08	--	----- 45 yards.
Left edge of house.....	208	51	--	----- 1¼ miles.
Right edge of roof of right-hand house.....	210	01	--	----- 1¼ miles.
Chimney of 2½-story house on Herring Island.....	236	38	--	----- 2 miles.
Tallest pine Smith Island.....	242	39	--	----- 4¼ miles.
Poplar near Horse.....	275	48	--	----- 5 miles.
"Janes Island Light".....	314	55	--	----- 6¾ miles.

FISHBONE.

Locality.—Dividing waters of Chesapeake Bay and Tangier Sound on western side of Fishbone Island, which is located between Smith and Tangier islands. (See Chart No. 9.)

Observed station is on marsh ground about 15 yards from shore to the west and about halfway between northern and southern extremities of island. The station is about level with high-water mark, but there is a slight elevation between station and shore and a small shanty stands about 20 yards to the southwest. Cement monument marking reference station is 10.08 meters south of observed station and about on line with shanty.

Marks.—Observed station is a nail in stub flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Janes Island Light" (N 40° 34' E).....	00	00	00	----- 7¼ miles.
"Fox Island Poplar".....	39	19	--	----- 5½ miles.
Chimney on house on Reach Hammock.....	58	49	--	----- 1¼ miles.
REFERENCE STATION.....	158	30	50	----- 10.08 meters.
Near corner of shanty.....	159	49	--	----- 17.44 meters.
Chimney on 2½-story house on Herring Island.....	306	32	--	----- 1¼ miles.
Peak of left house.....	349	32	--	----- 200 yards.
Stove pipe on flat roof shanty.....	356	41	--	----- 200 yards.

HORSE.

Locality.—West shore of Tangier Sound on east shore of Smith Island at point known as "Horse Hammock." (See Chart No. 9.)

Observed station is about 10 yards off shore in 2 feet of water at low-tide, between shore and northernmost row of piling. Several trees stand on bank near station. Cement monument marking reference station is 27.12 meters west of observed station and 20 yards back from shore.

Marks.—Observed station is stake in water. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Janes Island Light" (N 80° 19' E)-----	00	00	00	4¼ miles.
Somers Cove Light-----	1	30	00	6½ miles.
High pile-----	15	27	30	8.41 meters.
Fox Island Poplar-----	49	25	50	6¼ miles.
Left tangent of Smiths Island-----	106	45	--	150 yards.
Near corner of old cedar-----	146	02	--	32.42 meters.
Blaze in tree-----	155	41	--	14.21 meters.
Blaze in tree-----	166	27	--	25.92 meters.
REFERENCE STATION-----	174	15	30	27.12 meters.
Blaze in poplar-----	174	40	30	45.74 meters.
Pile extending above row of piles-----	309	08	--	16.66 meters.
High pile-----	333	03	--	9.80 meters.
Ice factory stack-----	335	07	--	7¼ miles.
Fish factory stack-----	358	04	--	5¾ miles.

JANES ISLAND LIGHT.

Locality.—Tangier Sound off entrance to Little Annesmessex River. (See Chart No. 9.)

Marks.—Observed station is center of black lantern on hexagonal screw pile structure known as "Janes Island Light."

References.—

	°	'	"	
"Solomons Lump Light" (N 42° 08' W)----	00	00	00	7¾ miles.

SOMERS COVE LIGHT.

Locality.—Little Annesmessex River at entrance to Crisfield Harbor. (See Chart No. 9.)

Marks.—Observed station is center of spindle on top of black lantern on square screw pile structure known as "Somers Cove Light."

References.—

	°	'	"	
"Janes Island Light" (S 84° 41' W)-----	00	00	00	2¼ miles.

EMMANUEL CHURCH.

Locality.—City of Crisfield, about ¾ mile east of Crisfield Harbor. (See Chart No. 9.)

Marks.—Observed station is center of steeple on church known as "Emmanuel Methodist Episcopal Church."

References.—None necessary.

MOUNT PLEASANT CHURCH.

Locality.—City of Crisfield, about 1 mile from Crisfield Harbor. (See Chart No. 9.)

Marks.—Observed station is center of steeple on brick church on Main street known as "Mount Pleasant Methodist Protestant Church."

References.—None necessary.

ASBURY CHURCH.

Locality.—In town of Lawsonia, about 1½ miles from Crisfield Harbor. (See Chart No. 9.)

Marks.—Observed station is center of very slender steeple on church known as "Asbury Methodist Episcopal Church."

References.—None necessary.

BEACON.

Locality.—Between Tangier and Pocomoke sounds, on small island just north of Great Fox Island known as "House Island." (See Chart No. 9.)

Observed station is about 100 yards south of extreme northern shore and about 30 yards from west shore of island. The shore of an inlet which makes into eastern side of island is about 15 feet northwest of observed station. Cement monument marking reference station is 4.12 meters west of observed station. A temporary wooden beacon stands 0.40 meters south of observed station.

Marks.—Observed station is center of a 6-inch tile pipe set in cement and projecting above ground about 6 inches. Reference station is center point of triangle on standard cement monument.

NOTE.—What was taken to be center mark of old "Beacon" of 1898 is a 2-inch iron pipe projecting above ground with three stubs projecting 3 feet above ground which were apparently used to support instrument. Wooden sills supported by 10-inch piles form a square with the 2-inch pipe in center.

References at observed station.—

	°	'	"	
"James Island Light" (N 11° 01' W).....	00	00	00	3¾ miles.
Fish factory stack.....	22	49	--	4¼ miles.
"Asbury Church Spire".....	51	32	15	6 miles.
"Sam".....	92	42	05	1¾ miles.
Chimney of highest building on Fox Island	171	16	--	1¾ miles.
"Fox Island Poplar".....	194	26	--	1 mile.
2-inch iron pipe ("Beacon 1898").....	200	28	15	7.26 meters.
Wooden beacon.....	222	46	00	0.40 meters.
REFERENCE STATION (cement monument).	299	20	40	4.12 meters.

References at 2-inch iron pipe ("Beacon 1898").—

	°	'	"	
"James Island Light" (N 11° 01' W).....	00	00	00	3¾ miles.
Fish factory stack.....	22	20	--	4¼ miles.
"Ashbury Church Spire".....	51	30	--	6 miles.
"Sam".....	92	27	--	1¾ miles.
Chimney on highest building on Fox Island	171	07	--	1¾ miles.
"Fox Island Poplar".....	194	23	--	1 mile.
REFERENCE STATION (Cement monument).	353	13	50	8.875 meters
"Beacon" (OBSERVED STATION).....	20	35	00	7.26 meters.
Wooden beacon.....	19	26	--	6.89 meters.

FOX ISLAND POPLAR.

Locality.—Eastern shore of lower Tangier Sound on western side of Great Fox Island about half-way between the northern and southern ends of the island. (See Chart No. 9.)

Observed station is a very prominent lone Lombardy poplar situated on solid land about ⅛ mile inshore from Tangier Sound.

Marks.—Observed station is center of a lone Lombardy poplar tree.

References.—None necessary.

SAM.

Locality.—Western end and northern shore of Pocomoke Sound on north side of the entrance to Cedar Straits about ⅛ mile north of Green Harbor Island. (See Chart No. 9.)

Observed station is on marsh land between two clumps of water bushes about 10 yards back from extreme high-water mark and 15 yards back from ordinary high-water mark. A slough passes about 100 yards north of station and there are several pools 50 yards north of station. Cement monument marking reference station is 2.81 meters north of observed station. "Watkins Point" of the Maryland-Virginia boundary is in the water between "Sam" and Green Harbor Island.

Marks.—Observed station is center of iron pipe projecting 4 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"James Island Light" (N 27° 30' W).....	00	00	00	4 miles.
Fish factory stack.....	23	56	--	4 miles.
Ice factory stack.....	40	46	--	4¾ miles.
REFERENCE STATION.....	41	35	50	2.81 meters.
East.....	95	03	--	3 miles.
Point of land.....	142	16	--	50 yards.
Left tangent of small island.....	175	18	--	300 yards.
Right tangent of small island.....	202	59	--	300 yards.
Left chimney on Fox Island.....	239	15	--	1¾ miles.
Chimney on middle of large building on Fox Island.....	241	08	--	1¼ miles.
"Fox Island Poplar".....	253	24	--	1¾ miles.
Large clump of trees on Fox Island.....	264	21	--	1¾ miles.

WATERMELON HUMMOCK.

Locality.—Northern shore of Pocomoke Sound in midst of a large tract of marsh land lying between Apes Hole Creek and Broad Creek about 2½ miles southeast of Somers Cove Light. (See Chart No. 9.)

Observed station is in midst of marsh near a clump of trees which stand about 25 yards to the north. It is about 150 yards southwest of a wide part of the upper end of Massey Creek.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Somers Cove Light" (N 51° 30' W).....	00	00	00	2½ miles.
Nail in blaze in pine.....	46	55	30	21.00 meters.
Nail in blaze in pine.....	83	47	30	11.36 meters.
Cedar tree.....	235	19	--	100 yards.
"Fox Island Poplar".....	278	51	--	4¾ miles.

EAST.

Locality.—North shore of Pocomoke Sound between Apes Hole and Broad creeks on a detached marsh point on east side of entrance to Cow Gap Creek. (See Chart No. 9.)

Observed station is on southerly part of a small marsh island separated about 200 yards from point of mainland. Water bushes cover northerly part of the island. Observed station is about 13 yards south of shore, 14 yards west of shore, 36 yards north of shore, and 5 yards east of shore. Cement monument marking reference station is 6.38 meters southeast of observed station.

Marks.—Observed station is a spike in a cement filled tile pipe with top even with surface of marsh. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"James Island Light" (N 62° 19' W).....	00	00	00	5¼ miles.
Fish factory stack.....	16	06	--	4¾ miles.
Somers Cove Light.....	20	18	00	3½ miles.
Tall tree.....	40	27	--	1¾ miles.
Point of land east.....	143	19	--	35 yards.
REFERENCE STATION.....	212	04	00	6.38 meters.
Pole at oyster house.....	277	12	--	3½ miles.
Right chimney of first house on Fox Island.....	298	31	--	4½ miles.
Point of land west.....	305	25	--	200 yards.
Cabin chimney.....	313	00	--	1 mile.

MONKEY.

Locality.—North side of Pocomoke Sound on a small island known as "Watkins Island" off entrance to Apes Hole Creek. (See Chart No. 9.)

Observed station is in the middle of a small islet about 12 yards by 4 yards which is covered with marsh grass and awash at high water. It is very solid ground on top but soft beneath and island will probably be washed away in a few years.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Scot" (N 77° 17' E).....	00	00	00	3¾ miles.
Chimney of Stirling's watch house.....	9	27		¾ mile.
Left hand chimney of Matthews red roof house on Saxis Island.....	22	01	--	5 miles.
Chimney of shanty near "Mos".....	68	46	--	4½ miles.
Ducking blind.....	134	36	--	200 yards.
Ducking blind.....	280	40	--	200 yards.
Peak of brown house.....	302	18	--	2¼ miles.
Windmill on barn.....	315	48	--	2½ miles.
Cupola of red house.....	336	49	--	5¼ miles.

SCOT.

Locality.—North shore of Pocomoke Sound on extreme southern point of marsh land between East and Marumsco creeks. (See Chart No. 10.)

Observed station is on a marsh point about 25 yards back from extreme end of point, 30 yards back from west side of point, and 20 yards from south side. It is surrounded by a thick and high clump of water bushes which extend along the shore to the eastward. There are no permanent reference objects near station. Cement monument marking reference station is 11.66 meters northeast of observed station.

Marks.—Observed station is an inverted spike in cement which is flush with ground and covers the top of a 6-inch tile pipe. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Old" (N 83° 00' E).....	00	00	00	2½ miles.
First red house (near Oil).....	30	17	--	3¾ miles.
2½-story white house.....	57	17	--	2¼ miles.
Chimney on 4-gable house.....	70	31	--	2¼ miles.
"Saxis Church".....	80	59	35	2¾ miles.
Chimney of Stirling's watch house.....	172	55	--	2½ miles.
Large tree.....	181	32	--	5¼ miles.
REFERENCE STATION.....	317	31	40	11.66 meters.
Chimney of brown house.....	314	56	--	2¼ miles.
Chimney of oyster house.....	358	57	--	2½ miles.

OLD.

Locality.—North shore of Upper Pocomoke Sound on point of land halfway between Marumsco Creek (called "Old Johns Creek" on navigation charts) and Williams Point. (See Chart No. 10.)

Observed station is about 150 yards east of John T. Handy's wharf and about 15 feet back. It is on a narrow strip of marsh land which is wearing away by wave action, and thick water bushes stand east and west of station. Three large pine trees stand about ⅓ mile north by east and several oyster houses about 200 yards to the west. Cement monument marking reference station is 11.57 meters north by east of observed station and about on line with largest of three large pines mentioned above.

Marks.—Observed station is spike in cement which is flush with ground and covers the top of a 6-inch tile pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Scot" (S 83° 03' W).....	00	00	00	2½ miles.
Chimney of Richardson's oyster house.....	12	41	--	1¾ miles.
End of wharf.....	16	41	--	150 yards.
Chimney of dwelling house.....	37	53	--	125 yards.
Largest of three pine trees.....	110	40	--	¾ mile.
Tree to right of three pine trees.....	112	00	--	¾ mile.
REFERENCE STATION.....	112	36	50	11.57 meters.
Chimney of dilapidated white house.....	162	43	--	250 yards.
Nearest gable of first faded red roof house.....	250	03	--	2 miles.
Nearest end of peak of Matthew's house on Saxis Island.....	310	21	--	2½ miles.
Right tangent of Saxis Island.....	313	21	--	2½ miles.

WILL.

Locality.—North shore of Pocomoke River on peninsula known as "Williams Point." (See Chart No. 10.)

Observed station is on the highest part of Williams Point about ⅜ mile north of extreme southern end of point and well back from both shores. A clump of bushes and two small cedar trees stand about 40 yards to the north and two medium-sized cedar trees about 300 yards to the west. A drainage creek with mouth on easterly side of peninsula runs almost completely around observed station, passing about 50 feet to the south.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Old" (N 71° 18' W).....	00	00	00	1¾ miles.
Cedar tree.....	7	33	--	300 yards.
Persimmon tree.....	20	24	--	320 yards.
Nail in blaze in cedar tree.....	153	21	20	34.30 meters.
Cedar tree near "Oil".....	297	13	--	1¾ miles.
Cedar tree.....	357	55	--	300 yards.

CUP.

Locality.—Virginia side of Pocomoke River on solid land about ¼ mile back from shore and ⅛ mile from nearest bend of Holden Creek. (See Chart No. 10.)

Observed station is octagonal cupola on unpainted barn on land known as "Jolly's Neck Farm." Barn stands near many cedar trees and south of another large unpainted building.

Marks.—Observed station is center point of top of cupola on barn.

References.—None necessary.

SUMMER.

Locality.—South and Virginia shore of mouth of Pocomoke River about ¾ mile south of Williams Point, on point known locally as "Sand Bar Point." (See Chart No. 10.)

Observed station is on sandy part of marsh land about 20 feet back from high-water mark on north and west sides of point. There are no permanent reference marks near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Will" (N 7° 06' E).....	00	00	00	1¾ miles.
Chimney of large white house.....	15	39	--	2¼ miles.
Large high tree.....	25	42	--	3 miles.
Large high tree (opposite shore).....	37	08	--	2 miles.
Southerly chimney of large house.....	79	39	--	1¾ miles.
Chimney on ell of red roof house.....	119	48	--	½ mile.
First pine tree in half dozen or more.....	161	25	--	½ mile.
Larger chimney of white house near woods.....	199	52	--	½ mile.
Federman's windmill.....	241	11	--	½ mile.

Survey of Oyster Bars, Somerset County, Md.

	°	'	"	
Peak of Federman's store.....	274	53	--	¾ mile.
"Oil".....	281	01	15	1 mile.
Lone tree.....	317	52	--	2½ miles.

OIL.

Locality.—South and Virginia shore of upper end of Pocomoke Sound on a point of land known as "Pig Point," located about 1½ miles southwest of Williams Point. (See Chart No. 10.)

Observed station is on western side of a marsh point covered with sand about 2 feet above and 30 feet east of ordinary high-water mark, 5 feet east of extreme high-water mark, 100 feet south of ordinary high-water mark, and about 3 feet south of extreme high-water mark. Water bushes skirt shore to east and north and sand beach curves to southwest. On next point about ¼ mile southwest are two trees. Cement monument marking reference station is 46.18 meters south of observed station.

Marks.—Observed station is spike in center of 6-inch tile pipe filled with cement with top flush with surface. Reference station is center of triangle on standard cement monument.

References.—

	°	'	"	
"Will" (N 47° 10' E)	00	00	00	1½ miles.
Large lone tree.....	17	43	--	2½ miles.
Peak of roof of Federman's store.....	70	03	--	¾ mile.
Chimney on oyster house.....	78	07	--	¼ mile.
Large tree.....	84	47	--	¼ mile.
Windmill on Federman's barn.....	90	19	--	¾ mile.
Chimney outside of cabin.....	100	50	--	¼ mile.
Persimmon tree.....	123	12	--	¼ mile.
REFERENCE STATION.....	137	50	40	46.18 meters.
Tree.....	179	50	--	¼ mile.
Point of land.....	186	10	--	100 yards.
"Saxis Church".....	193	28	--	2¾ miles.
Wharf.....	209	32	--	2¾ miles.
Chimney of white house.....	277	54	--	2½ miles.
Highest chimney in group of white houses.....	290	20	--	1¾ miles.
High long leaf pine.....	295	53	--	2 miles.
Westerly end of barn	352	40	--	2 miles.

WHARF.

Locality.—Southeast and Virginia side of Pocomoke Sound about ½ mile offshore of Saxis Island and about ¾ mile north-northwest of "Saxis Church." (See Chart No. 10.)

Observed station is on northwest end of house on detached pile structure called Saxis Pier.

Marks.—Observed station is flag pole on northwest end of peak of pier house on Saxis Island pier

References.—

	°	'	"	
"Saxis Church" (S 26° 10' E)	00	00	00	¾ mile.

SAXIS CHURCH.

Locality.—Southeast and Virginia shore of Pocomoke Sound on solid land known as "Saxis Island" about ¾ mile from shore of sound and ½ mile northeast of mouth of Starling Creek. (See Chart No. 10.)

Marks.—Observed station is center point of spire on church known as Southern Methodist Episcopal Church.

References.—None necessary.

MOS.

Locality.—Eastern extremity of marsh land between Pocomoke Sound and Messongo Creek on a point of land locally called "Fishing Point." (See Chart No. 10.)

Observed station is on the western extremity of marsh point and about ⅙ mile east of the eastern extremity of a small island. It is about 2 feet above and 8 feet back from ordinary high-water on north

side and 45 feet from western end of point. A crab-packing shanty stands about 8 yards to eastward of observed station.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Monkey" (N 35° 23' W).....	00	00	00	4½ miles.
Point of Island.....	33	01	--	¾ mile.
"Saxis Church".....	82	06	10	2½ miles.
Right edge of woods on Saxis Island.....	86	11	--	2½ miles.
Left corner of crab house.....	98	58	--	6.74 meters.
Right corner of crab house.....	128	43	--	6.37 meters.
Point of land on Burntwood Island.....	163	01	--	2 miles.
Chimney on shanty.....	301	38	--	200 yards.

BOUNDARIES OF OYSTER BARS.

EXPLANATION OF DESCRIPTIONS OF BOUNDARIES.

The oyster bars of Somerset County are 37 in number, and their total area, as marked out by buoys placed by the hydrographic engineer of the Commission, is 27,566 acres. As provided by law, the boundaries of the oyster bars are all straight lines, but they inclose areas of all shapes from triangles to complicated fourteen-sided figures, and of all sizes from 3,083 acres to 10 acres.^a The sides vary in length from 130 to 6,800 yards, and in some cases the corners of the boundaries are practically at the triangulation stations from which they are located, while in other instances they are over 13,600 yards from the landmarks most available for the purpose of fixing their positions.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made, and the magnitude of the work, with the consequent need of fixed and uniform methods, has made the problem of describing the boundaries one of considerable difficulty and importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the Commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and future.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in the county.

At the top of each tabular form is given the legal name of the oyster bar to be described, its general locality, and the serial number of the "Charts of Oyster Bars" of Maryland on which its legal boundaries are shown.

The first column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar; but where a corner of one oyster bar is identical with the

^a For similar statistics for other counties that have been surveyed, see Appendix C of this publication.

corner of the boundaries of one or more other oyster bars, crab bottoms, or clam beds, only the number of the corner of the oyster bar being described in the table is given in this column.

The second and third columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definition of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the Survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural causes or by acts of vandals desiring to defeat the purposes of the oyster laws of Maryland.

The fourth and fifth columns, under the general heading of "True bearing"^a and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

The sixth column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

The seventh and last column, under the heading of "U. S. C. & G. S. triangulation station,"^b gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication, under the heading of "Description of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars. One, to determine whether the buoys marking

^a The mean magnetic variation of Somerset County for 1908 was 5° 30' west of north, and increasing at the rate of 3' yearly.

^b Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington.

the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

(1) *Triangulation*.—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer, having a single sextant, the three-point method can be used, but not until the two angles determining the position of any buoy have been derived from the "Forward bearing" given in the tabular forms describing the boundaries of the oyster bars. For example, take "Turtle Egg Island" bar, which is the first one described in this publication, and assume that "Corner No. 3," is to be examined as to its position. The angle between the two landmarks "Senator" and "Deal Island Church" as determined from right to left from the forward bearings from this corner is $128^{\circ} 39'$ and the angle between "Deal Island Church" and "Crab" is $99^{\circ} 30'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative positions that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the

chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant then the other until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic locations of points are attained; in fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the Commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State fishery force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer takes compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,^a and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks for which the bearings are published have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used by getting their bearings directly from the chart by parallel rulers or a protractor and then applying them in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding

^aThe mean magnetic variation of Somerset County for 1908 was $5^{\circ} 30'$ west of north and increasing at the rate of $3'$ yearly.

"back" bearing (corrected for local magnetic declination), given in the fourth column of the tables opposite the "corner" in question and on line with the name of the "station" being occupied. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from the "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit, and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

TURTLE EGG ISLAND.

(Upper Tangier Sound—Charts Nos. 5 and 7)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	$^{\circ}$ $'$ $''$	$^{\circ}$ $'$ $''$	$^{\circ}$ $'$	$^{\circ}$ $'$	Yards.	
1	38 05 49.58	76 00 03.78	S 77 38 W	N 77 38 E	609	Miles.
			S 12 54 W	N 12 53 E	6113	Solomons Lump Light
			N 65 07 E	S 65 09 W	5553	Joshua.
2	38 06 24.78	76 00 21.47	S 5 22 W	N 5 22 E	1323	Miles.
			N 78 12 E	S 78 14 W	5629	Joshua.
			N 10 01 W	S 10 01 E	3400	Senator.
3	38 08 42.38	76 00 20.00	S 26 01 W	N 26 01 E	1437	Senator.
			N 77 22 E	S 77 24 W	5582	Deal Island Church.
			N 22 08 W	S 22 08 E	3984	Crab.
4	38 08 37.36	75 59 11.44	N 69 02 E	S 69 03 W	3878	Deal Island Church.
			N 40 45 W	S 40 46 E	5095	Crab.
			S 65 28 W	N 65 27 E	2700	Senator.
5	38 05 57.12	75 59 10.20	S 79 13 W	N 79 12 E	2059	Miles
			S 24 12 W	N 24 11 E	6812	Solomons Lump Light
			N 60 02 E	S 60 03 W	4168	Joshua.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MUD.

(Upper Tangier Sound—Chart No. 5.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 37.36	75 59 11.44	N 69 02 E	S 69 03 W	3878	Deal Island Church.
			N 40 45 W	S 40 46 E	5095	Crab.
			S 65 28 W	N 65 27 E	2700	Senator.
2	38 08 42.38	76 00 20.00	S 26 01 W	N 26 01 E	1437	Senator.
			N 77 22 E	S 77 24 W	5582	Deal Island Church.
			N 22 08 W	S 22 08 E	3984	Crab.
3	38 09 06.39	76 00 41.00	S 1 56 W	N 1 56 E	2102	Senator.
			N 86 05 E	S 86 07 W	6019	Deal Island Church.
			N 18 06 W	S 18 06 E	3030	Crab.
4	38 09 26.74	76 00 23.48	S 10 55 W	N 10 55 E	2838	Senator.
			S 87 10 E	N 87 07 W	5546	Deal Island Church.
			N 32 41 W	S 32 41 E	2607	Crab.
5	38 09 53.08	75 59 18.00	N 67 28 W	S 67 29 E	3411	Crab.
			S 31 50 W	N 31 49 E	4325	Senator.
			S 72 57 E	N 72 58 W	3970	Deal Island Church.

OLD ORCHARD.

(Upper Tangier Sound—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 09 12.58	75 58 01.68	N 83 29 E	S 83 30 W	1775	Deal Island Church.
			N 26 24 E	S 26 24 W	3064	Haines.
			S 61 51 W	N 61 53 E	4893	Senator.
2	38 09 15.60	75 58 21.20	N 87 31 E	S 87 32 W	2285	Deal Island Church.
			N 35 27 E	S 35 28 W	3245	Haines.
			S 57 34 W	N 57 33 E	4495	Senator.
3	38 10 06.90	75 58 19.19	S 42 53 W	N 42 52 E	5651	Senator.
			S 53 49 E	N 53 49 W	2761	Deal Island Church
			N 63 27 E	S 63 28 W	2044	Haines.
4	38 10 09.70	75 57 15.91	N 9 57 E	S 9 58 W	831	Haines.
			N 83 20 W	S 83 17 E	6445	Crab.
			S 17 31 E	N 17 31 W	1809	Deal Island Church.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HAINES.

(Upper Tangier Sound—Chart No. 5.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 10 06.90	75 58 19.19	S 42 53 W S 53 49 E N 63 27 E	N 42 52 E N 53 49 W S 63 28 W	5651 2761 2044	Senator. Deal Island Church. Haines.
2	38 11 13.65	75 58 16.39	N 39 44 W S 73 37 W S 52 40 E	S 39 45 E N 73 35 E N 52 40 W	2367 4993 2206	Sharkfin Shoal Light. Crab. Haines.
3	38 12 08.36	75 57 32.19	S 46 31 E N 61 58 E N 13 21 E	N 46 30 W S 62 00 W. S 13 22 W	2365 6723 4252	Room. White. Frog.
4	38 11 16.19	75 57 05.79	S 5 03 W N 82 39 E N 2 43 E	N 5 03 E S 82 39 W S 2 43 W	1429 1023 5903	Haines. Room. Frog.
5	38 10 46.46	75 57 43.66	S 85 02 W S 23 24 E S 64 30 E	N 85 00 E N 23 24 W N 64 30 W	5683 3230 978	Crab. Deal Island Church. Haines.
6	38 10 09.70	75 57 15.91	N 9 57 E N 83 20 W S 17 31 E	S 9 58 W S 83 17 E N 17 31 W	831 6445 1809	Haines. Crab. Deal Island Church.

HALLS POINT.

(Upper Tangier Sound—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 11 16.19	75 57 05.79	S 5 03 W N 82 39 E N 2 43 E	N 5 03 E S 82 39 W S 2 43 W	1429 1023 5903	Haines. Room. Frog.
2	38 12 08.36	75 57 32.19	S 46 31 E N 61 58 E N 13 21 E	N 46 30 W S 62 00 W S 13 32 W	2365 6723 4252	Room. White. Frog.
3	38 12 22.96	75 57 04.02	S 24 30 E N 62 46 E N 3 39 E	N 24 30 W S 62 48 W S 3 39 W	2330 5830 3653	Room. White. Frog.
4	38 12 10.72	75 55 55.59	N 47 32 E N 21 22 W S 26 35 W	S 47 33 W S 21 22 E N 26 35 E	4560 4357 1909	White. Frog. Room.
5	38 11 52.57	75 55 45.84	N 40 04 E N 21 34 W S 45 28 W	S 40 05 W S 21 35 E N 45 28 E	4824 5022 1563	White. Frog. Room.
6	38 11 47.98	75 56 30.40	S 4 22 E N 48 07 E N 7 48 W	N 4 22 W S 48 09 W S 7 49 E	944 5762 4870	Room. White. Frog.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ROCK CREEK.

(Upper Tangier Sound—Chart No. 5.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 12 11.80	75 55 19.92	S 45 58 W	N 45 57 E	2509	Room.
			N 89 35 E	S 89 36 W	3363	Short.
			N 38 27 E	S 38 28 W	3884	White.
2	38 12 17.40	75 55 28.62	S 39 07 W	N 39 07 E	2492	Room.
			S 87 23 E	N 87 20 W	3598	Short.
			N 42 51 E	S 42 52 W	3892	White.
3	38 12 20.98	75 55 15.54	S 43 05 W	N 43 04 E	2812	Room.
			S 84 59 E	N 84 57 W	3259	Short.
			N 40 04 E	S 40 05 W	3572	White.

EVANS.

(Entrance to Wicomico River—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 12 11.13	75 55 00.80	N 89 04 E	S 89 05 W	2854	Short.
			N 31 53 E	S 31 54 W	3610	White.
			S 53 20 W	N 53 20 E	2883	Room.
2	38 12 36.31	75 54 44.50	S 46 54 W	N 46 53 E	3762	Room.
			S 71 39 E	N 71 38 W	2550	Short.
			N 33 37 E	S 33 38 W	2661	White.
3	38 12 50.97	75 53 52.76	S 38 49 E	N 38 49 W	1664	Short.
			N 89 20 E	S 89 20 W	1755	Great Shoals Light.
			N 3 14 E	S 3 14 W	1725	White.
4	38 12 38.84	75 53 10.40	S 5 22 W	N 5 22 E	892	Short.
			N 55 41 E	S 55 41 W	761	Great Shoals Light.
			N 25 48 W	S 25 48 E	2367	White.
5	38 12 24.72	75 53 38.75	S 58 26 E	N 58 26 W	787	Short.
			N 56 47 E	S 56 48 W	1652	Great Shoals Light.
			N 6 02 W	S 6 02 E	2621	White.

BUOY.

(Entrance Wicomico River—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 12 30.79	75 52 38.34	S 73 13 E	N 73 12 W	1765	Dove.
			N 17 45 W	S 17 45 E	736	Great Shoals Light.
			S 56 38 W	N 56 38 E	1121	Short.
2	38 12 45.82	75 52 36.80	N 53 50 W	S 53 50 E	328	Great Shoals Light.
			S 41 02 W	N 41 01 E	1489	Short.
			S 58 21 E	N 58 21 W	1938	Dove.
3	38 12 48.43	75 52 23.80	N 80 10 W	S 80 10 E	620	Great Shoals Light.
			S 47 31 W	N 47 31 E	1795	Short.
			S 49 43 E	N 49 43 W	1708	Dove.
4	38 12 32.26	75 52 22.18	N 45 08 W	S 45 08 E	923	Great Shoals Light.
			S 64 00 W	N 64 00 E	1520	Short.
			S 66 04 E	N 66 04 W	1376	Dove.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WINGATE.

(Lower Wicomico River—Chart No. 5.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "		
1	38 14 01.31	75 51 58.41	N 70 14 E N 38 53 E N 31 47 W	S 70 14 W S 38 53 W S 31 47 E	Yards. 379 2099 1307	Wind. Holland. Ella.
2	38 14 05.12	75 52 02.63	S 61 19 E N 43 31 E N 30 23 W	N 61 19 W S 43 32 W S 30 22 E	536 2077 1138	Wind. Holland. Ella.
3	38 14 21.26	75 51 40.50	N 41 12 E N 69 23 W S 8 26 W	S 41 12 W S 69 24 E N 8 26 E	1277 1245 810	Holland. Ella. Wind.
4	38 14 12.82	75 51 33.60	N 27 50 E N 61 48 W S 30 21 W	S 27 50 W S 61 49 E N 30 21 E	1409 1529 598	Holland. Ella. Wind.

MOUNT VERNON WHARF.

(Middle Wicomico River—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 15 10.22	75 48 29.18	S 77 45 E N 6 01 W S 81 02 W	N 77 44 W S 6 01 E N 81 02 E	175 434 1138	Walnut. End. Jones.
2	38 15 13.76	75 48 30.30	N 50 26 W S 74 50 W S 52 02 E	S 50 26 E N 74 50 E N 52 02 W	1342 1134 254	Creek. Jones. Walnut.
3	38 15 15.14	75 48 19.08	N 49 44 W S 76 09 W S 25 44 W	S 49 44 E N 76 09 E N 25 44 E	411 1435 225	End. Jones. Walnut.
4	38 15 18.76	75 48 09.97	N 75 29 W S 74 07 W S 46 18 W	S 75 29 E N 74 06 E N 46 18 E	574 1701 470	End. Jones. Walnut.
5	38 15 14.18	75 48 08.56	N 63 19 W S 79 28 W S 65 41 W	S 63 19 E N 79 28 E N 65 41 E	665 1702 414	End. Jones. Walnut.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GEORGES.

(Middle Manokin River—Charts Nos. 5 and 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 34.98	75 50 51.58	S 61 04 E	N 61 02 W	4965	Fairmount Church.
			N 13 42 E	S 13 42 W	2314	Jean.
			N 53 58 W	S 53 58 E	1054	St. Pierre.
2	38 07 37.55	75 51 09.09	S 62 39 E	N 62 37 W	5417	Fairmount Church.
			N 35 54 W	S 35 54 E	659	St. Pierre.
			N 68 19 W	S 68 20 E	3245	Marsh.
3	38 08 15.04	75 50 56.73	S 44 25 W	N 44 25 E	1023	St. Pierre.
			N 71 55 E	N 71 55 W	2350	Staff.
			N 37 21 E	S 37 22 W	1130	Jean.
4	38 08 41.22	75 50 12.44	N 88 14 W	S 88 14 E	492	Jean.
			S 33 12 E	N 33 11 W	1927	Staff.
			S 78 31 E	N 78 30 W	2791	Sandy.
5	38 08 46.80	75 50 02.99	S 76 56 W	N 76 56 E	766	Jean.
			S 24 03 E	N 24 02 W	1972	Staff.
			S 60 07 E	N 60 07 W	2594	Cupola.
6	38 08 42.06	75 49 27.21	S 89 33 W	N 89 33 E	1668	Jean.
			S 62 07 W	N 62 05 E	3508	St. Pierre.
			S 5 13 W	N 5 13 E	1647	Staff.
7	38 08 22.52	75 49 17.98	N 71 37 W	S 71 38 E	2054	Jean.
			S 21 56 W	N 21 56 E	1059	Staff.
			S 65 43 E	N 65 43 W	1153	Cupola.
8	38 08 22.89	75 48 50.33	S 48 42 W	N 48 42 E	1507	Staff.
			S 32 51 E	N 32 51 W	579	Cupola.
			N 83 32 E	S 83 33 W	551	Sandy.
9	38 08 18.77	75 48 36.40	S 60 21 W	N 60 21 E	1729	Staff.
			S 9 19 W	N 9 19 E	352	Cupola.
			N 41 21 E	S 41 21 W	268	Sandy.
10	38 08 13.78	75 48 46.70	S 60 47 W	N 60 46 E	1407	Staff.
			S 50 31 E	N 50 31 W	282	Cupola.
			N 50 42 E	S 50 42 W	583	Sandy.
11	38 08 16.22	75 49 44.00	N 55 34 W	S 55 34 E	1517	Jean.
			S 73 49 W	N 73 48 E	2762	St. Pierre.
			S 21 08 E	N 21 08 W	825	Staff.
12	38 08 07.26	75 50 47.14	S 64 16 W	N 64 16 E	1078	St. Pierre.
			N 20 20 E	S 20 20 W	1237	Jean.
			S 76 43 E	N 76 43 W	2034	Staff.

BOUNDARIES OF NATURAL OYSTER BARS—continued.
SOUTHWEST MIDDLEGROUND.

(Chesapeake Bay—Off Smith Island—Charts Nos. 6 and 8.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 58 56.46	76 10 01.95	S 87 36 E	N 87 31 W	12019	Old Church (Smith Island).
			N 70 20 E	S 70 24 W	11802	Joseph.
			N 33 04 E	S 33 07 W	12510	Holland Island Bar Light.
2	38 01 24.82	76 10 20.36	S 66 14 E	N 66 09 W	13658	Old Church (Smith Island).
			S 84 49 E	N 84 44 W	11653	Joseph.
			N 53 10 E	S 53 13 W	9142	Holland Island Bar Light.
3	38 00 48.20	76 08 02.85	S 64 10 E	N 64 07 W	9810	Old Church (Smith Island).
			N 88 43 E	S 88 46 W	7940	Joseph.
			N 28 33 E	S 28 34 W	7642	Holland Island Bar Light.
4	37 59 25.92	76 07 29.61	S 79 18 E	N 79 15 W	8083	Old Church (Smith Island).
			N 67 17 E	S 67 20 W	7643	Joseph.
			N 16 15 E	S 16 16 W	9882	Holland Island Bar Light.

KEDGE STRAITS.

(Chesapeake Bay—Off Kedge Straits—Chart No. 6.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 59.23	76 05 02.83	S 67 03 E	N 67 01 W	4415	Fog.
			S 88 09 E	N 88 07 W	6613	Solomons Lump Light.
			N 26 34 W	S 26 34 E	2566	Holland Island Bar Light.
2	38 03 44.58	76 05 27.95	S 55 28 E	N 55 26 W	5735	Fog.
			S 76 33 E	N 76 30 W	7485	Solomons Lump Light.
			N 31 59 W	S 31 59 E	902	Holland Island Bar Light.
3	38 04 06.44	76 04 14.42	N 89 20 W	S 89 21 E	2438	Holland Island Bar Light.
			S 34 50 E	N 34 48 W	4858	Fog.
			S 64 59 E	N 64 57 W	5869	Solomons Lump Light.
4	38 03 23.36	76 04 01.96	S 16 38 E	N 16 38 W	5279	Joseph.
			S 43 55 E	N 43 54 W	3519	Fog.
			S 78 21 E	N 78 19 W	5092	Solomons Lump Light.

OYSTER CREEK.

(Outer Kedge Straits—Chart No. 6.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 41.17	76 02 30.87	N 80 23 W	S 80 25 E	5272	Holland Island Bar Light.
			S 0 14 E	N 0 14 W	3138	Fog.
			S 57 31 E	N 57 30 W	3033	Solomons Lump Light.
2	38 04 09.14	76 04 01.30	S 88 43 W	N 88 42 E	2789	Holland Island Bar Light.
			S 30 43 E	N 30 42 W	4745	Fog.
			S 62 38 E	N 62 36 W	5595	Solomons Lump Light.
3	38 04 34.32	76 04 32.26	S 65 05 W	N 65 04 E	2164	Holland Island Bar Light.
			S 33 24 E	N 33 24 W	5903	Fog.
			S 59 26 E	N 59 24 W	6730	Solomons Lump Light.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

OYSTER CREEK—Continued.

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
4	38 04 40.76	76 04 14.80	S 65 04 W	N 65 03 E	2677	Holland Island Bar Light.
			S 28 28 E	N 28 27 W	5840	Fog.
			S 55 41 E	N 55 39 W	6452	Solomons Lump Light.
5	38 05 10.20	76 04 00.70	S 52 53 W	N 52 52 E	3516	Holland Island Bar Light.
			S 21 25 E	N 21 24 W	6593	Fog.
			S 46 56 E	N 46 54 W	6780	Solomons Lump Light.
6	38 05 01.98	76 03 40.24	S 61 10 W	N 61 08 E	3823	Holland Island Bar Light.
			S 17 38 E	N 17 37 W	6150	Fog.
			S 45 21 E	N 45 20 W	6195	Solomons Lump Light.
7	38 04 29.16	76 03 45.49	S 77 04 W	N 77 02 E	3293	Holland Island Bar Light.
			S 22 50 E	N 22 50 W	5160	Fog.
			S 54 28 E	N 54 27 W	5587	Solomons Lump Light.
8	38 04 13.84	76 02 35.49	S 87 31 W	N 87 29 E	5080	Holland Island Bar Light.
			S 1 50 E	N 1 50 W	4241	Fog.
			S 44 28 E	N 44 27 W	3826	Solomons Lump Light.

MUSSEL HOLE.

(Middle Tangier Sound—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 36.76	75 59 41.02	N 10 41 W	S 10 41 E	6483	Miles.
			N 74 37 W	S 74 38 E	2045	Solomons Lump Light.
			S 35 44 E	N 35 43 W	4150	Terrapin.
2	38 02 44.55	76 00 05.88	N 5 03 W	S 5 03 E	8320	Miles.
			N 77 56 W	S 77 57 E	1337	Solomons Lump Light.
			S 40 22 E	N 40 21 W	4766	Terrapin.
3	38 03 07.81	75 59 52.42	N 31 17 E	S 31 19 W	9118	Joshua.
			N 9 34 W	S 9 35 E	5399	Miles.
			S 73 09 W	N 73 09 E	1742	Solomons Lump Light.
4	38 03 40.94	75 59 32.90	N 18 38 W	S 18 38 E	4440	Miles.
			S 53 27 W	N 53 27 E	2723	Solomons Lump Light.
			S 21 45 E	N 21 44 W	5957	Terrapin.
5	38 05 49.58	76 00 03.78	S 77 38 W	N 77 38 E	609	Miles.
			S 12 54 W	N 12 53 E	6113	Solomons Lump Light.
			N 65 07 E	S 65 09 W	5553	Joshua.
6	38 05 57.12	75 59 10.20	S 79 13 W	N 79 12 E	2059	Miles.
			S 24 12 W	N 24 11 E	6812	Solomons Lump Light.
			N 60 02 E	S 60 03 W	4168	Joshua.
7	38 02 50.94	75 58 34.94	N 26 41 W	S 26 42 E	6596	Miles.
			N 89 00 W	S 89 02 E	3734	Solomons Lump Light.
			S 9 44 E	N 9 44 W	3904	Terrapin.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CHAIN SHOAL.

(Upper Tangier Sound—Chart No. 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 54.32	75 58 05.33	N 40 52 E	S 40 52 W	2877	Joshua.
			N 43 56 W	S 43 58 E	6077	Senator.
			S 85 29 W	N 85 28 E	3763	Miles.
2	38 06 41.67	75 58 29.59	S 77 05 E	N 77 06 W	2594	Joshua.
			N 52 06 W	S 52 07 E	4525	Senator.
			S 58 43 W	N 58 42 E	3633	Miles.
3	38 07 49.53	75 58 13.70	N 82 59 W	S 83 00 E	4024	Senator.
			S 40 12 W	N 40 11 E	5466	Miles.
			S 50 57 E	N 50 56 W	2711	Joshua.
4	38 07 49.58	75 58 08.32	N 83 15 W	S 83 16 E	4167	Senator.
			S 41 19 W	N 41 18 E	5561	Miles.
			S 48 56 E	N 48 55 W	2603	Joshua.
5	38 07 49.36	75 57 48.36	N 83 55 W	S 83 53 E	4695	Senator.
			S 45 14 W	N 45 13 E	5920	Miles.
			S 40 02 E	N 40 01 W	2224	Joshua.
6	38 06 20.96	75 57 51.84	N 50 00 E	S 50 01 W	1988	Joshua.
			N 52 46 W	S 52 47 E	5748	Senator.
			S 73 53 W	N 73 52 E	4279	Miles.
7	38 06 02.66	75 57 29.40	N 26 02 E	S 26 02 W	2108	Joshua.
			N 51 38 W	S 51 40 E	6599	Senator.
			S 83 06 W	N 83 04 E	4744	Miles.

PINEY ISLAND WEST.

(Middle Tangier Sound—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 51.48	75 56 30.20	N 77 42 E	S 77 44 W	6823	Has.
			N 4 28 W	S 4 28 E	8366	Joshua.
			N 89 36 W	S 89 39 E	7059	Solomons Lump Light
2	38 03 50.44	75 57 18.84	N 5 47 E	S 5 49 W	6401	Joshua.
			N 52 05 W	S 52 07 E	6326	Miles.
			S 71 23 W	N 71 21 E	6080	Solomons Lump Light.
3	38 05 48.86	75 57 49.50	N 31 45 E	S 31 46 W	2776	Joshua.
			S 88 33 W	N 88 32 E	4174	Miles.
			S 39 48 W	N 39 46 E	7724	Solomons Lump Light.
4	38 05 56.82	75 57 19.40	N 17 29 E	S 17 30 W	2194	Joshua.
			S 85 43 W	N 85 41 E	4990	Miles.
			S 42 49 W	N 42 47 E	8456	Solomons Lump Light
5	38 05 42.60	75 56 59.66	N 2 58 E	S 2 58 W	2574	Joshua.
			N 88 52 W	S 88 54 E	5502	Miles.
			S 47 38 W	N 47 36 E	8492	Solomons Lump Light.
6	38 02 52.53	75 55 46.18	N 75 32 E	S 75 34 W	5672	Has.
			N 12 23 W	S 12 24 E	8504	Joshua.
			N 89 54 W	S 89 57 E	8234	Solomons Lump Light.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PINEY ISLAND SWASH.

(Lower Manokin River—Chart No. 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 06 30.82	75 55 43.81	N 51 16 E	S 51 18 W	5513	Marsh.
			N 27 09 E	S 27 08 W	3826	Kelley.
			N 63 23 W	S 63 24 E	2111	Joshua.
2	38 06 40.44	75 56 03.80	N 57 07 E	S 57 05 W	5756	Marsh.
			N 36 29 E	S 36 28 W	3832	Kelley.
			N 65 22 W	S 65 23 E	1491	Joshua.
3	38 06 55.34	75 55 50.46	N 59 39 E	S 59 41 W	5201	Marsh.
			N 36 43 E	S 36 44 W	3216	Kelley.
			N 86 02 W	S 86 01 E	1715	Joshua.
4	38 07 20.78	75 55 27.89	N 65 32 E	S 65 33 W	4260	Marsh.
			N 37 32 E	S 37 32 W	2170	Kelley.
			S 72 17 W	N 72 16 E	2427	Joshua.
5	38 07 54.55	75 53 44.94	S 89 25 E	N 89 21 W	3765	St. Pierre.
			N 61 07 E	S 61 07 W	1296	Marsh.
			N 67 43 W	S 67 44 E	1534	Kelley.
6	38 07 37.14	75 53 26.26	N 80 28 E	S 80 30 W	3313	St. Pierre.
			N 27 45 E	S 27 45 W	1369	Marsh.
			N 58 38 W	S 58 37 E	2256	Kelley.
7	38 06 40.66	75 54 52.43	N 43 15 E	S 43 16 W	4279	Marsh.
			N 7 00 E	S 7 00 W	3096	Kelley.
			N 79 19 W	S 79 20 E	3314	Joshua.
8	38 06 59.58	75 55 20.55	N 56 02 E	S 65 05 W	4439	Marsh.
			N 24 50 E	S 24 49 W	2683	Kelley.
			S 89 27 W	N 89 26 E	2508	Joshua.

SANDY POINT.

(Middle Manokin River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 08.44	75 48 27.90	N 70 53 E	S 70 53 W	2070	Green.
			N 5 09 W	S 5 09 E	553	Sandy.
			N 89 48 W	S 89 48 E	283	Cupola.
2	38 08 13.78	75 48 46.70	S 60 47 W	N 60 46 E	1407	Staff.
			S 50 31 E	N 50 31 W	282	Cupola.
			N 50 42 E	S 50 42 W	583	Sandy.
3	38 08 18.77	75 48 36.40	S 60 21 W	N 60 21 E	1729	Staff.
			S 9 19 W	N 9 19 E	352	Cupola.
			N 41 21 E	S 41 21 W	268	Sandy.
4	38 08 16.04	75 48 08.80	N 74 07 E	S 74 07 W	1502	Green.
			N 62 18 W	S 62 18 E	631	Sandy.
			S 72 08 W	N 72 08 E	832	Cupola.
5	38 08 10.17	75 48 07.23	N 66 13 E	S 66 14 W	1536	Green.
			N 50 43 W	S 50 43 E	775	Sandy.
			S 86 04 W	N 86 04 E	836	Cupola.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CORMAL.

(Middle Manokin River—Chart No. 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 33.63	75 50 42.00	S 60 03 E	N 60 01 W	4720	Fairmount Church.
			N 70 06 E	S 70 07 W	1959	Staff.
			N 7 10 E	S 7 16 W	2313	Jean.
2	38 07 34.98	75 50 51.58	S 61 04 E	N 61 02 W	4965	Fairmount Church
			N 13 42 E	S 13 42 W	2314	Jean.
			N 53 58 W	S 53 58 E	1054	St. Pierre.
3	38 08 07.26	75 50 47.14	S 64 16 W	N 64 16 E	1078	St. Pierre.
			N 20 20 E	S 20 20 W	1237	Jean.
			S 76 43 E	N 76 43 W	2034	Staff.
4	38 08 16.22	75 49 44.00	N 55 34 W	S 55 34 E	1517	Jean.
			S 73 49 W	N 73 48 E	2762	St. Pierre.
			S 21 08 E	N 21 08 W	825	Staff.
5	38 08 13.78	75 48 46.70	S 60 47 W	N 60 46 E	1407	Staff.
			S 50 31 E	N 50 31 W	282	Cupola.
			N 50 42 E	S 50 42 W	583	Sandy.
6	38 07 59.80	75 49 18.22	N 74 32 E	S 74 33 W	1098	Cupola.
			N 56 53 E	S 56 53 W	1538	Sandy.
			S 60 59 W	N 60 59 E	445	Staff.
7	38 08 08.57	75 49 29.28	S 80 27 W	N 80 26 E	3087	St. Pierre.
			S 10 28 W	N 10 28 E	521	Staff.
			S 89 51 E	N 89 51 W	1352	Cupola.
8	38 08 09.18	75 49 54.06	S 47 56 E	N 47 55 W	794	Staff.
			N 76 59 E	S 77 00 W	2329	Sandy.
			N 41 13 W	S 41 13 E	1457	Jean.
9	38 08 05.77	75 49 58.00	S 58 07 E	N 58 07 W	790	Staff.
			N 74 46 E	S 74 47 W	2435	Sandy.
			N 35 58 W	S 35 59 E	1499	Jean.
10	38 08 00.34	75 49 53.88	S 67 21 E	N 67 20 W	607	Staff.
			N 35 20 W	S 35 21 E	1768	Jean.
			S 84 23 W	N 84 23 E	2402	St. Pierre.
11	38 07 52.81	75 50 00.00	N 88 26 E	S 88 26 W	734	Staff.
			N 26 36 W	S 26 37 E	1843	Jean.
			N 89 30 W	S 89 31 E	2227	St. Pierre.
12	38 07 45.55	75 50 26.40	N 79 29 E	S 79 30 W	1451	Staff.
			N 3 42 W	S 3 42 E	1896	Jean.
			N 80 10 W	S 80 11 E	1546	St. Pierre.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MARSHY ISLAND.

(Lower Manokin River—Chart No. 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 49.82	75 53 40.47	S 17 05 E	N 17 04 W	6283	Flat Cap.
			S 40 08 E	N 40 08 W	3321	Has.
			N 63 55 E	S 63 56 W	2225	Prickly.
2	38 05 17.10	75 54 19.78	S 22 41 E	N 22 40 W	7505	Flat Cap.
			S 42 41 E	N 42 40 W	4704	Has.
			N 88 54 E	S 88 55 W	3047	Prickly.
3	38 05 50.40	75 54 24.20	S 71 25 E	N 71 24 W	3338	Prickly.
			N 24 23 E	S 24 25 W	5282	Marsh.
			N 60 03 W	S 60 05 E	4626	Joshua.
4	38 07 04.22	75 53 18.62	N 61 34 E	S 61 36 W	3483	St. Pierre.
			N 10 35 E	S 10 35 W	2362	Marsh.
			N 42 56 W	S 42 57 E	3113	Kelley.
5	38 07 38.06	75 52 23.58	N 72 05 E	S 72 05 W	1679	St. Pierre.
			N 41 08 W	S 41 09 E	1568	Marsh.
			N 72 23 W	S 72 25 E	3763	Kelley.
6	38 07 37.55	75 51 09.09	S 62 39 E	N 62 37 W	5417	Fairmount Church.
			N 35 54 W	S 35 54 E	659	St. Pierre.
			N 68 19 W	S 68 20 E	3245	Marsh.
7	38 07 34.98	75 50 51.58	S 61 04 E	N 61 02 W	4965	Fairmount Church.
			N 13 42 E	S 13 42 W	2314	Jean.
			N 53 58 W	S 53 58 E	1054	St. Pierre.
8	38 07 03.79	75 51 10.99	S 74 29 E	N 74 27 W	5046	Fairmount Church.
			N 11 21 W	S 11 22 E	1705	St. Pierre.
			N 51 45 W	S 51 46 E	3775	Marsh.
9	38 07 05.36	75 52 17.32	S 78 03 E	N 78 01 W	6776	Fairmount Church.
			N 41 28 E	S 41 29 W	2161	St. Pierre.
			N 27 41 W	S 27 42 E	2579	Marsh.
10	38 05 46.90	75 53 38.71	S 64 08 E	N 64 08 W	2169	Prickly.
			N 11 07 E	S 11 08 W	5024	Marsh.
			N 65 03 W	S 65 05 E	5757	Joshua.

Survey of Oyster Bars, Somerset County, Md.

71

BOUNDARIES OF NATURAL OYSTER BARS—continued.

DRUM POINT.

(Lower Manokin River—Chart No. 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 32.62	75 53 15.53	S 12 16 E	N 12 16 W	5552	Flat Cap.
			S 37 08 E	N 37 07 W	2445	Has.
			N 40 34 E	S 40 35 W	2052	Prickly.
2	38 04 49.82	75 53 40.47	S 17 05 E	N 17 04 W	6283	Flat Cap.
			S 40 08 E	N 40 08 W	3321	Has.
			N 63 55 E	S 63 56 W	2225	Prickly
3	38 05 46.90	75 53 38.71	S 64 08 E	N 64 08 W	2169	Prickly.
			N 11 07 E	S 11 08 W	5024	Marsh.
			N 65 03 W	S 65 05 E	5757	Joshua.
4	38 07 05.36	75 52 17.32	S 78 03 E	N 78 01 W	6776	Fairmount Church.
			N 41 28 E	S 41 29 W	2161	St. Pierre.
			N 27 41 W	S 27 42 E	2579	Marsh.
5	38 07 03.79	75 51 10.99	S 74 29 E	N 74 27 W	5046	Fairmount Church.
			N 11 21 W	S 11 22 E	1705	St. Pierre.
			N 51 45 W	S 51 46 E	3775	Marsh.
6	38 07 34.98	75 50 51.58	S 61 04 E	N 61 02 W	4965	Fairmount Church.
			N 13 42 E	S 13 42 W	2314	Jean.
			N 53 58 W	S 53 58 E	1054	St. Pierre.
7	38 07 33.63	75 50 42.00	S 60 03 E	N 60 01 W	4720	Fairmount Church.
			N 70 06 E	S 70 07 W	1959	Staff.
			N 7 16 E	S 7 16 W	2313	Jean.
8	38 07 22.98	75 50 41.10	S 63 50 E	N 63 48 W	4530	Fairmount Church.
			N 60 34 E	S 60 35 W	2088	Staff.
			N 5 48 E	S 5 48 W	3761	Jean.
9	38 07 14.55	75 50 47.49	S 67 59 E	N 67 57 W	4569	Fairmount Church.
			N 56 37 E	S 56 38 W	2382	Staff.
			N 36 18 W	S 36 18 E	1624	St. Pierre.
10	38 06 59.16	75 50 46.00	S 74 06 E	N 74 05 W	4361	Fairmount Church.
			N 46 49 E	S 46 50 W	2673	Staff.
			N 28 43 W	S 28 43 E	2084	St. Pierre.
11	38 06 35.34	75 51 56.97	S 86 18 E	N 86 15 W	6100	Fairmount Church.
			N 18 40 E	S 18 40 W	2778	St. Pierre.
			N 27 50 W	S 27 51 E	3728	Marsh.
12	38 06 05.78	75 52 32.34	S 6 36 E	N 6 36 W	1593	Prickly.
			N 85 04 E	S 85 07 W	7056	Fairmount Church.
			N 26 46 E	S 26 47 W	4064	St. Pierre.
13	38 05 56.46	75 53 00.24	S 36 05 E	N 36 04 W	1560	Prickly.
			N 33 08 E	S 33 09 W	4708	St. Pierre.
			N 0 41 W	S 0 41 E	4607	Marsh.
14	38 05 01.80	75 52 41.83	N 19 48 E	S 19 49 W	6149	St. Pierre.
			N 4 50 W	S 4 50 E	6473	Marsh.
			N 59 37 W	S 59 39 E	7808	Joshua.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PRICKLY POINT.

(Mouth Manokin River—Chart No. 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 28.72	75 53 19.95	S 13° 47' E	N 13° 46' W	5452	Flat Cap.
			S 41° 06' E	N 41° 05' W	2426	Has.
			N 40° 40' E	S 40° 41' W	2228	Prickly.
2	38 04 50.38	75 54 16.08	S 24° 53' E	N 24° 52' W	6641	Flat Cap.
			S 50° 24' E	N 50° 22' W	4011	Has.
			N 71° 58' E	S 71° 59' W	3100	Prickly.
3	38 05 17.10	75 54 19.78	S 22° 41' E	N 22° 40' W	7505	Flat Cap.
			S 42° 41' E	N 42° 40' W	4704	Has.
			N 88° 54' E	S 88° 55' W	3047	Prickly.
4	38 04 49.82	75 53 40.47	S 17° 05' E	N 17° 04' W	6283	Flat Cap.
			S 40° 08' E	N 40° 08' W	3321	Has.
			N 63° 55' E	S 63° 56' W	2225	Prickly.
5	38 04 32.62	75 53 15.53	S 12° 16' E	N 12° 16' W	5552	Flat Cap.
			S 37° 08' E	N 37° 07' W	2445	Has.
			N 40° 34' E	S 40° 35' W	2052	Prickly.

PINEY ISLAND EAST.

(Middle Tangier Sound—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 05.04	75 54 16.59	S 48° 39' E	N 48° 37' W	3742	Flat Cap.
			N 72° 14' E	S 72° 15' W	3260	Has.
			N 28° 06' W	S 28° 08' E	8939	Joshua.
2	38 04 19.61	75 54 49.20	S 36° 25' E	N 36° 23' W	6196	Flat Cap.
			S 69° 05' E	N 69° 03' W	4255	Has.
			N 62° 28' E	S 62° 30' W	4320	Prickly.
3	38 04 12.34	75 53 21.76	S 15° 49' E	N 15° 48' W	4929	Flat Cap.
			S 52° 10' E	N 52° 10' W	2079	Has.
			N 33° 47' E	S 33° 48' W	2698	Prickly.
4	38 03 23.75	75 53 02.85	S 15° 11' E	N 15° 10' W	3216	Flat Cap.
			N 72° 18' E	S 72° 19' W	1194	Has.
			N 40° 24' W	S 40° 27' E	9527	Joshua.

Survey of Oyster Bars, Somerset County, Md.

73

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HARRIS.

(Middle Tangier Sound—Chart No. 7.)

Corner of bar	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	38	02	37.94	75	54	04.81	S 58 00 E N 55 38 E N 27 13 W	N 57 59 W S 55 39 W S 27 15 E	2942 3380 9894	Flat Cap. Has. Joshua.
2	38	03	05.04	75	54	16.59	S 48 39 E N 72 14 E N 28 06 W	N 48 37 W S 72 15 W S 28 08 E	3742 3260 8939	Flat Cap. Has. Joshua.
3	38	03	23.75	75	53	02.85	S 15 11 E N 72 18 E N 40 24 W	N 15 10 W S 72 19 W S 40 27 E	3216 1194 9527	Flat Cap. Has. Joshua.
4	38	02	40.04	75	52	45.88	S 13 26 E N 58 48 E N 20 28 E	N 13 26 W S 58 49 W S 20 28 W	1675 5484 1961	Flat Cap. Ford. Has.

BIG ANNEMESSEX.

(Big Annemessex River—Chart No. 7.)

	°	'	"	°	'	"	°	'	Yards.	
1	38	02	50.93	75	51	45.86	N 51 20 E N 31 53 W S 31 14 W	S 51 21 W S 31 53 E N 31 14 E	3959 1731 2336	Ford. Has. Flat Cap.
2	38	03	16.52	75	51	49.69	N 63 14 E N 53 14 W S 21 12 W	S 63 15 W S 53 14 E N 21 12 E	3576 1014 3066	Ford. Has. Flat Cap.
3	38	03	45.06	75	51	07.58	S 30 17 W S 55 12 E N 72 37 E	N 30 17 E N 55 11 W S 72 37 W	4426 3314 2170	Flat Cap. Geog. Ford.
4	38	03	51.42	75	49	12.66	N 66 25 W S 9 16 W S 43 22 E	S 66 25 E N 9 16 E N 43 21 W	1084 2134 2420	Ford. Geog. Colburn.
5	38	03	08.18	75	48	47.60	S 73 07 E N 44 50 E N 41 17 W	N 73 06 W S 44 50 W S 41 18 E	1039 1650 2517	Colburn. Moon. Ford.
6	38	03	03.08	75	48	54.81	S 83 45 E N 45 17 E N 35 27 W	N 83 45 W S 45 17 W S 35 27 E	1193 1908 2533	Colburn. Moon. Ford.
7	38	03	17.77	75	49	31.17	S 8 47 E N 69 58 E N 17 40 W	N 8 47 W S 69 59 W S 17 40 E	982 2475 1646	Geog. Moon. Ford.
8	38	03	05.44	75	50	32.58	S 72 45 E N 29 50 E N 71 07 W	N 72 44 W S 29 50 W S 71 08 E	1872 2287 3031	Geog. Ford. Has.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CHURCH CREEK.

(Chesapeake Bay—Off Smith Island—Chart No. 8.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 58 41.19	76 04 16.61	N 89 55 E	S 89 56 W	2791	Old Church (Smith Island).
			N 60 15 E	S 60 16 W	4167	North Church (Smith Isl'd).
			N 22 06 E	S 22 07 W	7531	Fog.
2	37 58 53.37	76 05 41.59	S 85 25 E	N 85 23 W	5075	Old Church (Smith Island).
			N 74 16 E	S 74 18 W	6114	North Church (Smith Isl'd).
			N 37 49 E	S 37 52 W	8316	Fog.
3	37 59 53.49	76 05 47.45	S 65 00 E	N 64 58 W	5755	Old Church (Smith Island).
			S 86 31 E	N 86 28 W	6053	North Church (Smith Isl'd).
			N 49 10 E	S 49 12 W	6945	Fog.
4	38 00 01.79	76 04 12.09	S 44 32 E	N 44 31 W	3807	Old Church (Smith Island).
			S 79 28 E	N 79 27 W	3557	North Church (Smith Isl'd).
			N 32 29 E	S 32 30 W	5050	Fog.

PHILIBYS.

(Lower Tangier Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 57.88	75 54 49.54	N 59 04 E	S 59 05 W	4041	Somers Cove Light.
			N 15 01 W	S 15 01 E	1771	Janes Island Light.
			N 86 25 W	S 86 28 E	7711	Horse.
2	37 57 10.16	75 55 47.46	N 71 38 E	S 71 40 W	5281	Somers Cove Light.
			N 39 59 E	S 40 00 W	1692	Janes Island Light.
			N 89 24 W	S 89 26 E	6149	Horse.
3	37 57 36.68	75 54 13.91	N 74 05 W	S 74 05 E	1467	Janes Island Light.
			S 1 46 W	N 1 46 E	7833	Fox Island Poplar.
			N 73 00 E	S 73 01 W	2629	Somers Cove Light.
4	37 57 06.76	75 54 25.70	S 0 37 E	N 0 37 W	6821	Fox Island Poplar.
			N 57 52 E	S 57 53 W	3341	Somers Cove Light.
			N 37 49 W	S 37 50 E	1786	Janes Island Light.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GREAT ROCK.

(Lower Tangier Sound—Chart No. 9.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 03.68	75 55 47.80	S 40 19 E	N 40 18 W	3504	Fox Island Poplar.
			N 11 09 E	S 11 10 W	5668	Janes Island Light.
			N 54 48 W	S 54 51 E	7514	Horse.
2	37 55 04.91	75 56 45.03	S 54 27 E	N 54 26 W	4665	Fox Island Poplar.
			N 25 26 E	S 25 27 W	6112	Janes Island Light.
			N 47 05 W	S 47 07 E	6298	Horse.
3	37 56 05.24	75 56 31.32	N 58 03 E	S 58 06 W	7286	Somers Cove Light.
			N 32 56 E	S 32 57 W	4153	Janes Island Light.
			N 65 38 W	S 65 40 E	5465	Horse.
4	37 57 10.16	75 55 47.46	N 71 38 E	S 71 40 W	5281	Somers Cove Light.
			N 39 59 E	S 40 00 W	1692	Janes Island Light.
			N 89 24 W	S 89 26 E	6149	Horse.
5	37 56 57.88	75 54 49.54	N 59 04 E	S 59 05 W	4041	Somers Cove Light.
			N 15 01 W	S 15 01 E	1771	Janes Island Light.
			N 86 25 W	S 86 28 E	7711	Horse.

FOX ISLAND.

(Lower Tangier Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 54 26.23	75 56 53.80	S 70 45 E	N 70 43 W	4269	Fox Island Poplar
			N 22 44 E	S 22 45 W	7398	Janes Island Light.
			N 38 03 W	S 38 05 E	7103	Horse.
2	37 55 04.91	75 56 45.03	S 54 27 E	N 54 26 W	4665	Fox Island Poplar.
			N 25 26 E	S 25 27 W	6112	Janes Island Light.
			N 47 05 W	S 47 07 E	6298	Horse.
3	37 55 03.68	75 55 47.80	S 40 19 E	N 40 18 W	3504	Fox Island Poplar.
			N 11 09 E	S 11 10 W	5668	Janes Island Light.
			N 54 48 W	S 54 51 E	7514	Horse.
4	37 54 29.34	75 56 05.26	S 61 02 E	N 61 01 W	3124	Fox Island Poplar.
			N 13 06 E	S 13 06 W	6898	Janes Island Light.
			N 45 57 W	S 45 59 E	7894	Horse.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

STONE.

(Northern Pocomoke Sound—Chart No. 9.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 41.57	75 48 32.21	S 85 52 E N 7 51 E N 88 43 W	N 85 49 W S 7 51 W S 88 44 E	8251 2676 2467	Saxis Church. Monkey. East.
2	37 55 53.60	75 48 43.03	S 83 19 E N 16 15 E S 80 51 W	N 83 15 W S 16 15 W N 80 50 E	8577 2339 2206	Saxis Church. Monkey. East.
3	37 56 11.53	75 48 29.22	N 65 24 E N 9 52 E S 69 26 W	S 65 27 W S 9 53 W N 69 25 E	7473 1666 2720	Scot. Monkey. East.
4	37 56 01.22	75 48 05.47	N 60 42 E N 9 56 W S 79 11 W	S 60 45 W S 9 56 E N 79 10 E	7065 2021 3238	Scot. Monkey. East.
5	37 55 50.76	75 47 52.93	S 82 49 E N 16 16 W S 85 52 W	N 82 46 W S 16 16 E N 85 53 E	7237 2439 3525	Saxis Church. Monkey. East.
6	37 55 45.79	75 48 13.64	N 2 58 W S 88 19 W S 67 30 W	S 2 58 E N 88 18 E N 67 27 E	2517 2964 10680	Monkey. East. Fox Island Poplar.

WATKINS.

(Northern Pocomoke Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 01.22	75 48 05.47	N 60 42 E N 9 56 W S 79 11 W	S 60 45 W S 9 56 E N 79 10 E	7065 2021 3238	Scot. Monkey. East.
2	37 56 11.53	75 48 29.22	N 65 24 E N 9 52 E S 69 26 W	S 65 27 W S 9 53 W N 69 25 E	7473 1666 2720	Scot. Monkey. East.
3	37 56 25.34	75 48 44.22	N 69 49 E N 30 16 E S 56 29 W	S 69 52 W S 30 16 W N 56 28 E	7666 1362 2573	Scot. Monkey. East.
4	37 56 41.98	75 48 17.81	N 72 12 E N 1 46 W S 55 12 W	S 72 15 W S 1 46 E N 55 11 E	6816 614 3472	Scot. Monkey. East.
5	37 56 42.70	75 47 54.58	N 70 40 E N 47 16 W S 59 59 W	S 70 43 W S 47 17 E N 59 58 E	6220 870 4009	Scot. Monkey. East.
6	37 56 25.57	75 47 39.00	N 64 12 E N 42 06 W S 69 50 W	S 64 14 W S 42 06 E N 69 48 E	6057 1574 4141	Scot. Monkey. East.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

LONG POINT.

(Northern Pocomoke Sound—Chart No. 9.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 25.34	75 48 44.22	N 69 49 E	S 69 52 W	7666	Scot.
			N 30 16 E	S 30 16 W	1362	Monkey.
			S 56 29 W	N 56 28 E	2573	East.
2	37 57 00.82	75 48 42.30	S 73 37 W	N 73 36 E	2931	Watermelon Hummock.
			S 40 01 W	N 40 00 E	3418	East
			S 88 09 E	N 88 08 W	635	Monkey.
3	37 57 02.80	75 48 31.38	S 73 57 W	N 73 56 E	3229	Watermelon Hummock.
			S 42 50 W	N 42 49 E	3660	East.
			S 75 31 E	N 75 31 W	354	Monkey.
4	37 56 50.20	75 48 38.72	S 80 50 W	N 80 49 W	2945	Watermelon Hummock.
			S 45 25 W	N 45 24 E	3218	East.
			S 70 55 E	N 70 52 W	8892	Saxis Church.
5	37 56 41.98	75 48 17.81	N 72 12 E	S 72 15 W	6816	Scot.
			N 1 46 W	S 1 46 E	614	Monkey.
			S 55 12 W	N 55 11 E	3472	East.

GUNBY.

(Middle Pocomoke Sound—Chart No. 10.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 11.06	75 46 07.04	S 11 50 E	N 11 50 W	4762	Mos.
			S 69 55 E	N 69 54 W	4634	Saxis Church.
			N 43 49 E	S 43 51 W	4330	Scot.
2	37 56 28.98	75 46 40.33	S 19 31 E	N 19 31 W	5586	Mos.
			S 67 17 E	N 67 15 W	5681	Saxis Church.
			N 57 03 E	S 57 04 W	4632	Scot.
3	37 56 48.98	75 46 15.36	S 11 25 E	N 11 24 W	6059	Mos.
			S 57 54 E	N 57 52 W	5399	Saxis Church.
			N 60 11 E	S 60 12 W	3712	Scot.
4	37 56 35.02	75 45 34.66	S 1 10 E	N 1 10 W	5470	Mos.
			S 55 28 E	N 55 27 W	4231	Saxis Church.
			N 42 40 W	S 42 41 E	3150	Scot.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MARUMSCO.

(Middle Pocomoke Sound—Chart No. 10.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 45.40	75 44 30.51	S 15 24 W S 32 50 E N 62 44 E	N 15 23 E N 32 49 W S 62 46 W	6034 3272 5484	Mos. Saxis Church. Old.
2	37 57 27.13	75 45 13.96	S 3 30 W S 35 13 E N 70 33 E	N 3 30 E N 35 12 W S 70 33 W	7239 5087 1678	Mos. Saxis Church. Scot.
3	37 57 39.07	75 43 56.62	N 72 05 W S 10 47 E N 79 58 E	S 72 05 E N 10 47 W S 79 59 W	507 4641 4032	Scot. Saxis Church. Old.
4	37 56 55.12	75 43 48.54	S 11 58 E N 59 49 E N 23 11 W	N 11 58 W S 59 50 W S 23 11 E	3146 4344 1781	Saxis Church. Old. Scot.

KITTS CREEK WEST.

(Upper Pocomoke Sound—Chart No. 10.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 58 18.42	75 42 32.72	S 66 44 W S 13 08 W S 70 09 E	N 66 43 E N 13 07 E N 70 08 W	2964 6044 1841	Scot. Saxis Church. Old.
2	37 58 26.98	75 42 47.64	S 57 53 W S 8 58 W S 66 47 W	N 57 52 E N 8 58 E N 66 46 E	2744 6251 2316	Scot. Saxis Church. Old.
3	37 58 32.00	75 42 41.52	S 56 48 W S 10 10 W S 61 09 E	N 56 47 E N 10 10 E N 61 09 W	2973 6445 2244	Scot. Saxis Church. Old.
4	37 58 26.82	75 42 27.42	S 63 06 W S 13 47 W S 60 15 E	N 63 04 E N 13 47 E N 60 14 W	3212 6353 1831	Scot. Saxis Church. Old.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

KITTS CREEK EAST.

(Upper Pocomoke Sound—Chart No. 10.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 58.16	75 41 47.71	S 82 56 W	N 82 54 E	3954	Scot.
			S 26 20 W	N 26 19 E	5805	Saxis Church.
			N 83 45 E	S 83 45 W	533	Old.
2	37 58 15.78	75 42 26.14	S 69 32 W	N 69 31 E	3093	Scot.
			S 14 57 W	N 14 57 E	6001	Saxis Church.
			S 70 59 E	N 70 58 W	1645	Old.
3	37 58 24.01	75 42 20.96	S 65 54 W	N 65 52 E	3327	Scot.
			S 15 31 W	N 15 30 E	6305	Saxis Church.
			S 60 08 E	N 60 08 W	1634	Old.
4	37 58 16.70	75 42 09.59	S 71 35 W	N 71 34 E	3520	Scot.
			S 18 51 W	N 18 51 E	6158	Saxis Church
			S 63 00 E	N 63 00 W	1249	Old.
5	37 58 06.40	75 41 41.59	S 79 25 W	N 79 23 E	4159	Scot.
			S 26 33 W	N 26 32 E	6131	Saxis Church.
			S 59 00 E	N 59 00 W	426	Old.

BOUNDARIES OF CRAB BOTTOMS.

EXPLANATION OF DESCRIPTIONS OF BOUNDARIES.

The laws providing for the survey of the oyster bars of Maryland also contain a section which requires "an accurate survey of and delineation upon the maps and charts aforesaid of all bottoms of the tributaries of the Chesapeake Bay where grass grows and it is profitable to scrape for soft shell or shedder crabs, and shall have such bottoms properly designated by permanent objects on the shore, as provided hereinbefore for natural oyster beds, bars, and rocks, which said crabbing sections shall be exempt from leasing for oyster culture."

The crab bottoms of Somerset County are the first ones to be surveyed in Maryland,^a and as far as known such a survey is altogether a new problem which differs^b in many ways from that of a survey of oyster bars.

In a general way it can be stated that the boundaries of the crab bottoms as established by the Maryland Shell Fish Commission and delineated on the "Charts of Oyster Bars," published by the Coast and Geodetic Survey, are confined to waters between the 1-fathom contour (6 feet depth of water) and the shore line. Therefore, in most cases the mean low water line of the shore has been adopted as an inner boundary for the

^a Anne Arundel County has no crab bottoms within the meaning of the law.

^b See pages 69 to 70 of "First Annual Report of Maryland Shell Fish Commission" for description of "Survey of crabbing grounds."

crab bottoms, but the same system of straight lines and numbered corners used to delineate the oyster bars has been retained for defining the offshore water boundaries.

There are 54 individual "crab bottoms" in Somerset County exempt from leasing for oyster culture which have been surveyed and delineated under separate names by the Commission, and their total area as determined by the hydrographic engineer of the Commission is 32,108 acres. The largest of these bottoms is 2,182 acres and the smallest 23 acres.

The boundaries of the crab bottoms of Somerset County as established by the Shell Fish Commission and shown on the Coast and Geodetic Survey charts and projections and on the "leasing charts" of the Commission are technically defined and described by a method but little different from that used for the description of the boundaries of oyster bars.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all crabbing bottoms in the county.

At the top of each tabular form is given the legal name of the crab bottom to be described, its general locality, and the serial numbers of the "Charts of Oyster Bars" of Maryland on which its boundaries are shown.

The first column, under the heading of "Corner of bottom," gives the number corresponding to the corner of the boundary as shown on the charts. These numbers have been assigned to the corners of the crab bottoms in a slightly different manner from that used in describing the oyster bars, although both proceed in a clockwise direction around their boundaries. In delineating the crab bottoms it was generally planned to have both the first and last corners fall on land, thus making the mean low-water line of the shore between these two corners form the connecting boundary, as is always stated in such cases in a note at the bottom of the tabular descriptions. Where a corner of one bottom is identical with the corners of one or more other crab bottoms, oyster bars, or clam beds, only the number of the crab bottom being described in the table is given in this column.

The second and third columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definitions of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the Survey, even though all the landmarks and buoys used for their original location have been destroyed.

The fourth and fifth columns, under the general heading of "True bearing" ^a and the specific headings of "Forward" and "Back," give bearings measured from a true north and south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column.

^a The mean magnetic variation of Somerset County for 1908 was 5° 30' west of north and increasing at the rate of 3' yearly.

The sixth column, under the heading of "Distance," gives the three computed distances in yards from the corner of the crab bottom noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

The seventh and last column, under the heading of "U. S. C. & G. S. triangulation station," gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bottom" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication, under the heading of "Descriptions of landmarks."

The descriptive note of the shore line boundary which usually follows the description of the last corner on the tabular form and sometimes between intermediate corners which happen to fall on land requires no explanation, other than to state that the laws of Maryland reserve to riparian owners all waters of "any creek, cove, or inlet less than one hundred yards in width at its mouth at low tide."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the crab bottoms as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey, but as they are practically the same as those required for the relocation of oyster-bar boundaries the description of the "Surveying methods for relocation of boundaries" under the heading of "Boundaries of oyster bars" in this publication will be sufficient to indicate several methods that can be used in the relocation of crab-bottom boundaries.

BOUNDARIES OF CRAB BOTTOMS.

DEEP BANKS.

(Inner Holland Straits—Charts Nos. 5 and 6.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 32.98	76 02 06.20	S 40 11 W	N 40 10 E	9076	Holland Island Bar Light.
			S 36 24 E	N 36 23 W	4494	Miles.
			N 64 29 E	S 64 30 W	2435	Senator.
2	38 07 45.04	76 02 35.76	S 34 36 E	N 34 36 E	8920	Holland Island Bar Light.
			S 40 39 E	N 40 38 W	5303	Miles.
			N 77 51 E	S 77 52 W	3054	Senator.
3	38 08 50.58	76 01 53.42	S 32 59 W	N 32 56 E	11384	Holland Island Bar Light.
			S 20 28 E	N 20 27 W	6653	Miles
			S 49 51 E	N 49 50 W	2431	Senator.
4	38 08 04.09	76 00 43.66	S 5 43 E	N 5 43 W	4689	Miles.
			S 70 11 E	N 70 09 W	6484	Joshua.
			N 80 42 E	S 80 45 W	5117	Bar.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

HOLLAND STRAITS.

(West Tangier Sound—Charts Nos. 5, 6, and 7.)

Corner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 04.09	76 00 43.66	S 5 43 E	N 5 43 W	4689	Miles.
			S 70 11 E	N 70 09 W	6484	Joshua.
			N 80 42 E	S 80 45 W	5117	Bar.
2	38 08 50.58	76 01 53.42	S 32 59 W	N 32 56 E	11384	Holland Island Bar Light.
			S 20 28 E	N 20 27 W	6653	Miles.
			S 49 51 E	N 49 50 W	2431	Senator.
3	38 09 26.74	76 00 23.48	S 10 55 W	N 10 55 E	2838	Senator.
			S 87 10 E	N 87 07 W	5546	Deal Island Church.
			N 32 41 W	S 32 41 E	2607	Crab.
4	38 09 06.39	76 00 41.00	S 1 56 W	N 1 56 E	2102	Senator.
			N 86 05 E	S 86 07 W	6019	Deal Island Church.
			N 18 06 W	S 18 06 E	3030	Crab.
5	38 08 42.38	76 00 20.00	S 26 01 W	N 26 01 E	1437	Senator.
			N 77 22 E	S 77 24 W	5582	Deal Island Church.
			N 22 08 W	S 22 08 E	3984	Crab.

PUNGERS CREEK.

(West Upper Tangier Sound—Charts Nos. 5, 6, and 7.)

	° ' "	° ' "	° ' "		Yards.	
			° ' "	° ' "		
1	38 08 04.09	76 00 43.66	S 5 43 E	N 5 43 W	4689	Miles.
			S 70 11 E	N 70 09 W	6484	Joshua.
			N 80 42 E	S 80 45 W	5117	Bar.
2	38 08 42.38	76 00 20.00	S 26 01 W	N 26 01 E	1437	Senator.
			N 77 22 E	S 77 24 W	5582	Deal Island Church.
			N 22 08 W	S 22 08 E	3984	Crab.
3	38 06 24.78	76 00 21.47	S 5 22 W	N 5 22 E	1323	Miles.
			N 78 12 E	S 78 14 W	5629	Joshua.
			N 10 01 W	S 10 01 E	3400	Senator.
4	38 05 49.58	76 00 03.78	S 77 38 W	N 77 38 E	609	Miles.
			S 12 54 W	N 12 53 E	6113	Solomons Lump Light.
			N 65 07 E	S 65 09 W	5553	Joshua.
5	38 05 46.97	76 00 23.58	N 66 27 E	S 66 29 W	6072	Joshua.
			N 6 36 W	S 6 36 E	4654	Senator.
			S 57 11 W	N 57 11 E	80	Miles.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

LAWS THOROUGHFARE NORTH.

(Northeast Tangier Sound—Inside Deal Island—Chart No. 5.)

Cor- ner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 10 00.83	75 56 45.32	N 30 58 W	S 30 58 E	1304	Haines.
			S 58 13 W	N 58 10 E	7468	Senator.
			S 10 46 W	N 10 46 E	1449	Deal Island Church.
2	38 10 12.78	75 56 36.20	N 51 57 W	S 51 57 E	1160	Haines.
			S 56 39 W	N 56 37 E	7889	Senator.
			S 15 42 W	N 15 42 E	1897	Deal Island Church.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

DEAL ISLAND.

(East Upper Tangier Sound—Charts Nos. 5 and 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 50.57	75 57 26.57	N 85 01 W	S 85 03 E	5269	Senator.
			S 48 40 W	N 48 38 E	6371	Miles.
			S 26 00 E	N 26 00 W	1940	Joshua.
2	38 07 49.36	75 57 48.36	N 83 55 W	S 83 53 E	4695	Senator.
			S 45 14 W	N 45 13 E	5920	Miles.
			S 40 02 E	N 40 01 W	2224	Joshua.
3	38 07 49.58	75 58 08.32	N 83 15 W	S 83 16 E	4167	Senator.
			S 41 19 W	N 41 18 E	5561	Miles.
			S 48 56 E	N 48 55 W	2603	Joshua.
4	38 08 20.24	75 58 12.82	N 74 45 E	S 74 45 W	1071	Bar.
			N 46 20 E	S 46 21 W	2848	Deal Island Church.
			S 82 17 W	N 82 15 E	4054	Senator.
5	38 08 47.88	75 57 40.59	S 15 01 E	N 15 01 W	674	Bar.
			N 49 18 E	S 49 18 W	1585	Deal Island Church.
			N 12 37 E	S 12 37 W	3666	Haines.
6	38 08 50.96	75 57 21.51	N 36 43 E	S 36 43 W	1160	Deal Island Church.
			N 4 49 E	S 4 49 W	3486	Haines.
			S 23 52 W	N 23 52 E	825	Bar.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

LAWS THOROUGHFARE SOUTH.

(North Manokin River—Inside of Deal Island—Charts Nos. 5 and 7.)

Corner of bottom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	38	08	17.58	75	54	13.80	S 73 20 W	N 73 20 E	680	Kelley.
							S 25 36 E	N 25 35 W	6683	Prickly.
							S 85 28 E	N 85 27 W	1909	Marsh.
2	38	07	54.55	75	53	44.94	S 89 25 E	N 89 21 W	3765	St. Pierre.
							N 61 07 E	S 61 07 W	1296	Marsh.
							N 67 43 W	S 67 44 E	1534	Kelley.
3	38	07	20.78	75	55	27.89	N 65 32 E	S 65 33 W	4260	Marsh.
							N 37 32 E	S 37 32 W	2170	Kelley.
							S 72 17 W	N 72 16 E	2427	Joshua.
4	38	07	33.58	75	55	38.18	S 60 08 W	N 60 07 E	2350	Joshua.
							S 48 31 E	N 48 29 W	6856	Prickly.
							N 51 05 E	S 51 05 W	2052	Kelley.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

MARSH ISLAND.

(North Shore Manokin River—Charts Nos. 5 and 7.)

	°	'	"	°	'	"	°	'	Yards.	
1	38	08	13.09	75	53	02.32	S 68 00 W	N 67 57 E	6675	Joshua.
							S 9 29 E	N 9 29 W	5957	Prickly.
							S 75 49 E	N 75 48 W	2712	St. Pierre.
2	38	07	54.55	75	53	44.94	S 89 25 E	N 89 21 W	3765	St. Pierre.
							N 61 07 E	S 61 07 W	1296	Marsh.
							N 67 43 W	S 67 44 E	1534	Kelley.
3	38	08	17.58	75	54	13.80	S 73 20 W	N 73 20 E	680	Kelley.
							S 25 36 E	N 25 35 W	6683	Prickly.
							S 85 28 E	N 85 27 W	1909	Marsh.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

85

BOUNDARIES OF CRAB BOTTOMS—continued.

ST. PIERRE.

(North Shore Manokin River—Charts Nos. 5 and 7.)

Corner of bottom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	38	08	13.08	75	51	18.98	S 10 30 W	N 10 30 E	676	St. Pierre.
							S 87 56 E	N 87 54 W	4276	Cupola.
							N 52 58 E	S 52 59 W	1601	Jean.
2	38	08	15.04	75	50	56.73	S 44 25 W	N 44 25 E	1023	St. Pierre.
							S 71 55 E	N 71 55 W	2350	Staff.
							N 37 21 E	S 37 22 W	1130	Jean.
3	38	07	37.55	75	51	09.09	S 62 39 E	N 62 37 W	5417	Fairmount Church.
							N 35 54 W	S 35 54 E	659	St. Pierre.
							N 68 19 W	S 68 20 E	3245	Marsh.
4	38	07	38.06	75	52	23.58	N 72 05 E	S 72 05 W	1679	St. Pierre.
							N 41 08 W	S 41 09 E	1568	Marsh.
							N 72 23 W	S 72 25 E	3763	Kelley.
5	38	07	37.14	75	53	26.26	N 80 28 E	S 80 30 W	3313	St. Pierre.
							N 27 45 E	S 27 45 W	1369	Marsh.
							N 58 38 W	S 58 37 E	2256	Kelley.
6	38	07	54.55	75	53	44.94	S 89 25 E	N 89 21 W	3765	St. Pierre.
							N 61 07 E	S 61 07 W	1296	Marsh.
							N 67 43 W	S 67 44 E	1534	Kelley.
7	38	08	13.09	75	53	02.32	S 68 00 W	N 67 57 E	6675	Joshua.
							S 9 29 E	N 9 29 W	5957	Prickly.
							S 75 49 E	N 75 48 W	2712	St. Pierre.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

GEANQUAKIN.

(North Shore Manokin River—Charts Nos. 5 and 7.)

	°	'	"	°	'	"	°	'	Yards.	
1	38	09	02.82	75	50	09.12	S 39 08 W	N 39 09 E	920	Jean.
							S 22 26 E	N 22 26 W	2531	Staff.
							S 64 07 E	N 64 06 W	2942	Sandy.
2	38	08	41.22	75	50	12.44	N 88 14 W	S 88 14 E	492	Jean.
							S 33 12 E	N 33 11 W	1927	Staff.
							S 78 31 E	N 78 30 W	2791	Sandy.
3	38	08	15.04	75	50	56.73	S 44 25 W	N 44 25 E	1023	St. Pierre.
							S 71 55 E	N 71 55 W	2350	Staff.
							N 37 21 E	S 37 22 W	1130	Jean.
4	38	08	13.08	75	51	18.98	S 10 30 W	N 10 30 E	676	St. Pierre.
							S 87 56 E	N 87 54 W	4276	Cupola.
							N 52 58 E	S 52 59 W	1601	Jean.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

SPRING ISLAND.

(East Shore Holland Straits—Chart No. 6.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 06 39.86	76 03 17.80	S 37 30 W	N 37 28 E	6484	Holland Island Bar Light.
			S 68 15 E	N 68 13 W	4926	Miles.
			N 55 19 E	S 55 20 W	4992	Senator.
2	38 07 45.04	76 02 35.76	S 34 37 W	N 34 36 E	8920	Holland Island Bar Light.
			S 40 39 E	N 40 38 W	5303	Miles.
			N 77 51 E	S 77 52 W	3054	Senator.
3	38 07 32.98	76 02 06.20	S 40 11 W	N 40 10 E	9076	Holland Island Bar Light.
			S 36 24 E	N 36 23 W	4494	Miles.
			N 64 29 E	S 64 30 W	2435	Senator.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

PRY COVE.

(East Shore Holland Straits—Chart No. 6.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 44.11	76 03 44.60	S 44 43 W	N 44 42 E	4594	Holland Island Bar Light.
			S 15 12 E	N 15 11 W	7546	Fog.
			S 38 05 E	N 38 03 W	7318	Solomons Lump Light.
2	38 06 39.86	76 03 17.80	S 37 30 W	N 37 28 E	6484	Holland Island Bar Light.
			S 68 15 E	N 68 13 W	4926	Miles.
			N 55 19 E	S 55 20 W	4992	Senator.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

NORTH KEDGE STRAITS.

(Entrance Kedge Straits—Chart No. 6.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 29.67	76 02 08.22	S 82 36 W	N 82 34 E	5851	Holland Island Bar Light.
			S 7 04 W	N 7 04 E	4809	Fog.
			S 30 54 E	N 30 53 W	3805	Solomons Lump Light.
2	38 04 13.84	76 02 35.49	S 87 31 W	N 87 29 E	5080	Holland Island Bar Light.
			S 1 50 E	N 1 50 W	4241	Fog.
			S 44 28 E	N 44 27 W	3826	Solomons Lump Light.
3	38 04 29.16	76 03 45.49	S 77 04 W	N 77 02 E	3293	Holland Island Bar Light.
			S 22 50 E	N 22 50 W	5160	Fog.
			S 54 28 E	N 54 27 W	5587	Solomons Lump Light.
4	38 05 01.98	76 03 40.24	S 61 10 W	N 61 08 E	3823	Holland Island Bar Light.
			S 17 38 E	N 17 37 W	6150	Fog.
			S 45 21 E	N 45 20 W	6195	Solomons Lump Light.
5	38 05 10.20	76 04 00.70	S 52 53 W	N 52 52 E	3516	Holland Island Bar Light.
			S 21 25 E	N 21 24 W	6593	Fog.
			S 46 56 E	N 46 54 W	6780	Solomons Lump Light.
6	38 05 44.11	76 03 44.60	S 44 43 W	N 44 42 E	4594	Holland Island Bar Light.
			S 15 12 E	N 15 11 W	7546	Fog.
			S 38 05 E	N 38 03 W	7318	Solomons Lump Light.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

SHEEPSHEAD.

(North Kedge Straits—Charts Nos. 6 and 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 14.98	76 00 47.58	S 4 04 W	N 4 03 E	2777	Solomons Lump Light.
			N 48 18 E	S 48 21 W	8310	Joshua.
			N 10 36 E	S 10 36 W	3112	Miles.
2	38 03 07.81	75 59 52.42	N 31 17 E	S 31 19 W	9118	Joshua.
			N 9 34 W	S 9 35 E	5399	Miles.
			S 73 09 W	N 73 09 E	1742	Solomons Lump Light.
3	38 03 52.80	76 01 33.90	N 85 49 W	S 85 52 E	6734	Holland Island Bar Light.
			S 23 10 W	N 23 09 E	3837	Fog.
			S 27 11 E	N 27 11 W	2272	Solomons Lump Light.
4	38 04 13.84	76 02 35.49	S 87 31 W	N 87 29 E	5080	Holland Island Bar Light.
			S 1 50 E	N 1 50 W	4241	Fog.
			S 44 28 E	N 44 27 W	3826	Solomons Lump Light.
5	38 04 29.67	76 02 08.22	S 82 36 W	N 82 34 E	5851	Holland Island Bar Light.
			S 7 04 W	N 7 04 E	4809	Fog.
			S 30 54 E	N 30 53 W	3805	Solomons Lump Light.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

FISHING POINT.

(Tangier Sound—Entrance Kedge Straits—Charts Nos. 6 and 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance.	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 29.00	76 00 56.80	N 3 31 E	S 3 31 W	805	Solomons Lump Light.
			N 66 43 W	S 66 46 E	8389	Holland Island Bar Light.
			S 74 16 W	N 74 17 E	2587	Fog.
2	38 02 44.78	76 00 55.48	N 2 38 E	S 2 38 W	272	Solomons Lump Light.
			N 70 16 W	S 70 19 E	8224	Holland Island Bar Light.
			S 64 00 W	N 63 59 E	2817	Fog.
3	38 02 28.54	76 00 03.70	N 5 08 W	S 5 08 E	6674	Miles.
			N 59 03 W	S 59 04 E	1593	Solomons Lump Light.
			S 44 24 E	N 44 23 W	4327	Terrapin.
4	38 01 35.00	75 59 10.00	S 51 07 E	N 51 07 W	2050	Terrapin.
			N 18 16 E	S 18 18 W	11502	Joshua.
			N 46 50 W	S 46 51 E	3836	Solomons Lump Light.
5	38 01 28.96	75 59 14.56	S 57 46 E	N 57 45 W	2140	Terrapin.
			N 18 31 W	S 18 30 E	11732	Joshua.
			N 43 25 W	S 43 26 E	3894	Solomons Lump Light.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

SOUTH KEDGE STRAITS.

(Entrance Kedge Straits—Chart No. 6.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 07.00	76 02 34.00	N 68 11 E	S 68 11 W	104	Fog.
			N 59 39 E	S 59 40 W	3060	Solomons Lump Light.
			N 51 35 W	S 51 37 E	6528	Holland Island Bar Light.
2	38 02 30.23	76 02 35.04	N 57 14 W	S 57 14 E	6049	Holland Island Bar Light.
			S 9 26 E	N 9 26 W	753	Fog.
			N 74 03 E	S 74 04 W	2776	Solomons Lump Light.
3	38 02 46.44	76 01 48.74	N 66 40 W	S 66 42 E	6884	Holland Island Bar Light.
			N 40 42 W	N 40 42 E	1704	Fog.
			N 81 27 E	S 81 27 W	1450	Solomons Lump Light.
4	38 02 52.84	76 00 54.95	N 72 03 W	S 72 06 E	8152	Holland Island Bar Light.
			S 59 23 W	N 59 22 E	2958	Fog.
			S 42 12 E	N 42 08 W	13840	Janes Island Light.
5	38 02 44.78	76 00 55.48	N 2 38 E	S 2 38 W	272	Solomons Lump Light.
			N 70 16 W	S 70 19 E	8224	Holland Island Bar Light.
			S 64 00 W	N 63 59 E	2817	Fog.
6	38 02 29.00	76 00 56.80	N 3 31 E	S 3 31 W	805	Solomons Lump Light.
			N 66 43 W	S 66 46 E	8389	Holland Island Bar Light.
			S 74 16 W	N 74 17 E	2587	Fog.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

SMITH ISLAND THOROUGHFARE.

(Smith Island—Charts Nos. 6, 8, and 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 59 49.66	76 02 56.68	S 15 55 E	N 15 55 W	2397	Old Church.
			S 80 46 E	N 80 45 W	1504	North Church.
			N 6 08 W	S 6 08 E	2160	Joseph.
2	38 00 11.66	76 03 01.32	S 14 23 E	N 14 23 W	3145	Old Church.
			S 58 34 W	N 58 34 E	1885	North Church.
			N 4 20 W	S 4 20 E	1410	Joseph.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

TERRAPIN SAND.

(Southwest Tangier Sound—Charts Nos. 7 and 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 01 28.96	75 59 14.56	S 57 46 E	N 57 45 W	2140	Terrapin.
			N 18 31 W	S 18 30 E	11732	Joshua.
			N 43 25 W	S 43 26 E	3894	Solomons Lump Light.
2	38 01 35.00	75 59 10.00	S 51 07 E	N 51 07 W	2050	Terrapin.
			N 18 16 E	S 18 18 W	11502	Joshua.
			N 46 50 W	S 46 51 E	3836	Solomons Lump Light.
3	38 01 01.70	75 57 33.37	S 80 30 W	N 80 30 E	995	Terrapin.
			S 23 13 W	N 23 12 E	8424	Horse.
			N 78 09 E	S 78 14 W	8233	Flat Cap.
4	38 00 15.12	75 57 10.17	N 48 42 W	S 48 43 E	2131	Terrapin.
			S 32 34 W	N 32 32 E	7322	Horse.
			S 33 43 E	N 33 42 W	5938	Janes Island Light.
5	38 00 10.56	75 57 23.66	N 38 30 W	S 38 30 E	1994	Terrapin.
			S 30 45 W	N 30 44 E	7002	Horse.
			S 37 22 E	N 37 21 W	6022	Janes Island Light.
6	38 00 18.54	75 58 43.38	S 13 00 W	N 13 00 E	6453	Horse.
			S 48 51 E	N 48 49 W	7680	Janes Island Light.
			N 34 27 E	S 34 27 W	1566	Terrapin.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

SOUTH MARSH.

(West Tangier Sound—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 46.97	76 00 23.58	N 66 27 E	S 66 29 W	6072	Joshua.
			N 6 36 W	S 6 36 E	4654	Senator.
			S 57 11 W	N 57 11 E	80	Miles.
2	38 05 49.58	76 00 03.78	S 77 38 W	N 77 38 E	609	Miles.
			S 12 54 W	N 12 53 E	6113	Solomons Lump Light.
			N 65 07 E	S 65 09 W	5553	Joshua.
3	38 03 40.94	75 59 32.90	N 18 38 W	S 18 38 E	4440	Miles.
			S 53 27 W	N 53 27 E	2723	Solomons Lump Light.
			S 21 45 E	N 21 44 W	5957	Terrapin.
4	38 03 07.81	75 59 52.42	N 31 17 E	S 31 19 W	9118	Joshua.
			N 9 34 W	S 9 35 E	5399	Miles.
			S 73 09 W	N 73 09 E	1742	Solomons Lump Light.
5	38 04 14.98	76 00 47.58	S 4 04 W	N 4 03 E	2777	Solomons Lump Light.
			N 48 18 E	S 48 21 W	8310	Joshua.
			N 10 36 E	S 10 36 W	3112	Miles.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

WENONA.

(East Upper Tangier Sound—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 07.07	75 57 00.83	N 72 02 W	S 72 04 E	6239	Senator.
			S 63 23 W	N 63 21 E	6119	Miles.
			S 30 39 E	N 30 38 W	322	Joshua.
2	38 07 07.81	75 57 24.02	N 70 21 W	S 70 23 E	5646	Senator.
			S 60 18 W	N 60 17 E	5584	Miles.
			S 68 54 E	N 68 54 W	839	Joshua.
3	38 07 49.36	75 57 48.36	N 83 55 W	S 83 53 E	4695	Senator.
			S 45 14 W	N 45 13 E	5920	Miles.
			S 40 02 E	N 40 01 W	2224	Joshua.
4	38 07 50.57	75 57 26.57	N 85 01 W	S 85 03 E	5269	Senator.
			S 48 40 W	N 48 38 E	6371	Miles.
			S 26 00 E	N 26 00 W	1940	Joshua.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide

5	38 07 37.82	75 56 52.22	N 81 48 W	S 81 51 E	6228	Senator.
			S 56 28 W	N 56 25 E	6838	Miles.
			S 2 50 W	N 2 50 E	1316	Joshua.
6	38 07 37.02	75 56 47.46	N 81 43 W	S 81 46 E	6357	Senator.
			S 57 14 W	N 57 11 E	6929	Miles.
			S 8 29 W	N 8 29 E	1301	Joshua.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

LITTLE DEAL ISLAND.

(North Entrance Manokin River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 01.70	75 56 01.94	N 63 17 E	S 63 18 W	5355	Marsh.
			N 43 19 E	S 43 20 W	3249	Kelley.
			S 86 06 W	N 86 05 E	1407	Joshua.
2	38 06 55.34	75 55 50.46	N 59 39 E	S 59 41 W	5201	Marsh.
			N 36 43 E	S 36 44 W	3216	Kelley.
			N 86 02 W	S 86 01 E	1715	Joshua.
3	38 06 40.44	75 56 03.80	N 57 07 E	S 57 05 W	5756	Marsh.
			N 36 29 E	S 36 28 W	3832	Kelley.
			N 65 22 W	S 65 23 E	1491	Joshua.
4	38 06 22.24	75 55 56.58	S 69 12 E	N 69 10 W	6018	Prickly.
			S 29 27 E	N 29 26 W	4243	Kelley.
			N 51 25 W	S 51 25 E	1979	Joshua.
5	38 06 22.82	75 57 00.64	S 73 38 E	N 73 36 W	7643	Prickly.
			N 45 54 E	S 45 55 W	5281	Kelley.
			N 7 28 E	S 7 28 W	1226	Joshua.
6	38 06 55.00	75 56 48.50	S 65 12 E	N 65 10 W	7722	Prickly.
			N 53 15 E	S 53 16 W	4330	Kelley.
			N 51 35 W	S 51 35 E	210	Joshua.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

LOWER THOROUGHFARE.

(Inside of Little Deal Island—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 33.58	75 55 38.18	S 60 08 W	N 60 07 E	2350	Joshua.
			S 48 31 E	N 48 29 W	6856	Prickly.
			N 51 05 E	S 51 05 W	2052	Kelley.
2	38 07 20.78	75 55 27.89	N 65 32 E	S 65 33 W	4260	Marsh.
			N 37 32 E	S 37 32 W	2170	Kelley.
			S 72 17 W	N 72 16 E	2427	Joshua.
3	38 06 55.34	75 55 50.46	N 59 39 E	S 59 41 W	5201	Marsh.
			N 36 43 E	S 36 44 W	3216	Kelley.
			N 86 02 W	S 86 01 E	1715	Joshua.
4	38 07 01.70	75 56 01.94	N 63 17 E	S 63 18 W	5355	Marsh.
			N 43 19 E	S 43 20 W	3249	Kelley.
			S 86 06 W	N 86 05 E	1407	Joshua.
5	38 07 37.02	75 56 47.46	N 81 43 W	S 81 46 E	6357	Senator.
			S 57 14 W	N 57 11 E	6929	Miles.
			S 8 29 W	N 8 29 E	1301	Joshua.
6	38 07 37.82	75 56 52.22	N 81 48 W	S 81 51 E	6228	Senator.
			S 56 28 W	N 56 25 E	6838	Miles.
			S 2 50 W	N 2 50 E	1316	Joshua.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

PINEY ISLAND.

(Entrance Manokin River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 50.38	75 54 16.08	S 24 53 E S 50 24 E N 71 58 E	N 24 52 W N 50 22 W S 71 59 W	6641 4011 3100	Flat Cap. Has. Prickly.
2	38 05 18.04	75 55 11.98	N 89 39 E N 8 43 E N 38 49 W	S 89 41 W S 8 43 W S 38 50 E	4438 5916 4363	Prickly. Kelley. Joshua.
3	38 05 53.05	75 55 42.00	S 77 36 E N 19 57 E N 41 02 W	N 77 34 W S 19 57 W S 41 02 E	5362 4977 2942	Prickly. Kelley. Joshua.
4	38 06 30.82	75 55 43.81	N 51 16 E N 27 09 E N 63 23 W	S 51 18 W S 27 08 W S 63 24 E	5513 3826 2111	Marsh. Kelley. Joshua.
5	38 06 59.58	75 55 20.55	N 56 02 E N 24 50 E S 89 27 W	S 56 05 W S 24 49 W N 89 26 E	4439 2683 2508	Marsh. Kelley. Joshua.
6	38 06 40.66	75 54 52.43	N 43 15 E N 7 00 E N 79 19 W	S 43 16 W S 7 00 W S 79 20 E	4279 3096 3314	Marsh. Kelley. Joshua.
7	38 07 37.14	75 53 26.26	N 80 28 E N 27 45 E N 58 38 W	S 80 30 W S 27 45 W S 58 37 E	3313 1369 2256	St. Pierre. Marsh. Kelley.
8	38 07 38.06	75 52 23.58	N 72 05 E N 41 08 W N 72 23 W	S 72 05 W S 41 09 E S 72 25 E	1679 1568 3763	St. Pierre. Marsh. Kelley.
9	38 07 04.22	75 53 18.62	N 61 34 E N 10 35 E N 42 56 W	S 61 36 W S 10 35 W S 42 57 E	3483 2362 3113	St. Pierre. Marsh. Kelley.
10	38 05 50.40	75 54 24.20	S 71 25 E N 24 23 E N 60 03 W	N 71 24 W S 24 25 W S 60 05 E	3338 5282 4626	Prickly. Marsh. Joshua.
11	38 05 17.10	75 54 19.78	S 22 41 E S 42 41 E N 88 54 E	N 22 40 W N 42 40 W S 88 55 W	7505 4704 3047	Flat Cap. Has. Prickly.

BOUNDARIES OF CRAB BOTTOMS—continued.

TEAGUE CREEK.

(South Shore Manokin River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 06 48.06	75 50 19.23	S 76 44 E N 29 12 E N 37 54 W	N 76 44 W S 29 13 W S 37 54 E	3578 2526 2791	Fairmount Church. Staff. St. Pierre.
2	38 07 00.26	75 50 28.47	S 71 43 E N 39 36 E N 39 21 W	N 71 42 W S 39 36 W S 39 21 E	3928 2325 2316	Fairmount Church. Staff. St. Pierre.
3	38 07 36.22	75 50 21.92	S 55 29 E N 66 06 E N 70 36 W	N 55 28 W S 66 07 W S 70 36 E	4314 1430 1742	Fairmount Church. Staff. St. Pierre.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

GOOSE CREEK.

(South Shore Manokin River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 18.83	75 52 25.47	N 17 33 E N 64 48 W S 2 18 E	S 17 34 W S 64 50 E N 2 18 W	5466 7926 3520	St. Pierre. Joshua. Has.
2	38 05 18.78	75 52 39.20	N 89 35 E N 5 59 W N 63 36 W	S 89 35 W S 5 59 E S 63 39 E	366 5910 7597	Prickly. Marsh. Joshua.
3	38 06 05.78	75 52 32.34	S 6 36 E N 85 04 E N 26 46 E	N 6 36 W S 85 07 W S 26 47 W	1593 7056 4964	Prickly. Fairmount Church. St. Pierre.
4	38 06 24.82	75 51 34.20	S 89 37 E N 5 24 E N 32 44 W	N 89 35 W S 5 24 W S 32 45 E	5481 3000 4340	Fairmount Church. St. Pierre. Marsh.
5	38 06 17.94	75 51 23.71	N 87 51 E N 0 03 E N 34 04 W	S 87 53 W S 0 03 W S 34 05 E	5204 3214 4687	Fairmount Church. St. Pierre. Marsh.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

MINE CREEK.

(South Entrance Manokin River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1.	38 04 19.88	75 52 56.22	S 7 35 E	N 7 35 W	5040	Flat Cap.
			S 32 09 E	N 32 09 W	1807	Has.
			N 22 24 E	S 22 25 W	2150	Prickly.
2	38 04 28.72	75 53 19.95	S 13 47 E	N 13 46 W	5452	Flat Cap.
			S 41 06 E	N 41 05 W	2426	Has.
			N 40 40 E	S 40 41 W	2228	Prickly.
3	38 04 32.62	75 53 15.53	S 12 16 E	N 12 16 W	5552	Flat Cap.
			S 37 08 E	N 37 07 W	2445	Has.
			N 40 34 E	S 40 35 W	2052	Prickly.
4	38 05 01.80	75 52 41.83	N 19 48 E	S 19 49 W	6149	St. Pierre.
			N 4 50 W	S 4 50 E	6473	Marsh.
			N 59 37 W	S 59 39 E	7808	Joshua.
5	38 05 18.78	75 52 39.20	N 89 35 E	S 89 35 W	366	Prickly.
			N 5 59 W	S 5 59 E	5910	Marsh.
			N 63 36 W	S 63 39 E	7597	Joshua.
6	38 05 18.83	75 52 25.47	N 17 33 E	S 17 34 W	5466	St. Pierre.
			N 64 48 W	S 64 50 E	7926	Joshua.
			S 2 18 E	N 2 18 W	3520	Has.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

HAZARD.

(East Tangier Sound—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 34.52	75 52 20.16	N 2 18 W	S 2 18 E	3520	Prickly.
			S 84 12 W	N 84 07 E	13798	Solomons Lump Light.
			S 4 53 W	N 4 53 E	3480	Flat Cap.
2	38 03 14.58	75 52 22.80	S 4 38 W	N 4 37 E	2804	Flat Cap.
			S 79 40 E	N 79 38 W	4804	Geog.
			N 5 59 W	S 5 59 E	676	Has.
3	38 03 37.66	75 53 06.76	S 14 50 E	N 14 50 W	3696	Flat Cap.
			S 85 08 E	N 85 07 W	1247	Has.
			N 17 53 E	S 17 53 W	3585	Prickly.
4	38 04 28.72	75 53 19.95	S 13 47 E	N 13 46 W	5452	Flat Cap.
			S 41 06 E	N 41 05 W	2426	Has.
			N 40 40 E	S 40 41 W	2228	Prickly.
5	38 04 19.88	75 52 56.22	S 7 35 E	N 7 35 W	5040	Flat Cap
			S 32 09 E	N 32 09 W	1807	Has.
			N 22 24 E	S 22 25 W	2150	Prickly
6	38 03 40.62	75 52 34.38	S 1 17 E	N 1 17 W	3673	Flat Cap
			S 28 29 E	N 28 29 W	431	Has.
			N 4 06 E	S 4 06 W	3320	Prickly.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

95

BOUNDARIES OF CRAB BOTTOMS—continued.

SHARK POINT.

(North Entrance Big Annemessex River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 03.54	75 51 00.00	S 28 43 W	N 28 42 E	5078	Flat Cap.
			S 45 03 E	N 45 02 W	3559	Geog.
			N 89 13 E	S 89 14 W	1868	Ford.
2	38 03 45.06	75 51 07.58	S 30 17 W	N 30 17 E	4426	Flat Cap.
			S 55 12 E	N 55 11 W	3314	Geog.
			N 72 37 E	S 72 37 W	2170	Ford.
3	38 03 16.52	75 51 49.69	N 63 14 E	S 63 15 W	3576	Ford.
			N 53 14 W	S 53 14 E	1014	Has.
			S 21 12 W	N 21 12 E	3066	Flat Cap.
4	38 03 14.58	75 52 22.80	S 4 38 W	N 4 37 E	2804	Flat Cap.
			S 79 40 E	N 79 38 W	4804	Geog.
			N 5 59 W	S 5 59 E	676	Has.
5	38 03 34.52	75 52 20.16	N 2 18 W	S 2 18 E	3520	Prickly.
			S 84 12 W	N 84 07 E	13798	Solomons Lump Light.
			S 4 53 W	N 4 53 E	3480	Flat Cap.

Thence from corner No 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

FORDS WHARF.

(North Shore Big Annemessex River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 59.36	75 49 12.98	N 80 26 W	S 80 26 E	998	Ford.
			S 8 02 W	N 8 02 E	2397	Geog.
			S 73 14 E	N 73 14 W	1923	Moon.
2	38 03 51.42	75 49 12.66	N 66 25 W	S 66 25 E	1084	Ford.
			S 9 16 W	N 9 16 E	2134	Geog.
			S 43 22 E	N 43 21 W	2420	Colburn.
3	38 03 45.06	75 51 07.58	S 30 17 W	N 30 17 E	4426	Flat Cap.
			S 55 12 E	N 55 11 W	3314	Geog.
			N 72 37 E	S 72 37 W	2170	Ford.
4	38 04 03.54	75 51 00.00	S 28 43 W	N 28 42 E	5078	Flat Cap.
			S 45 03 E	N 45 02 W	3559	Geog.
			N 89 13 E	S 89 14 W	1868	Ford.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

CRANE COVE.

(Upper Big Annemessex River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 42.22	75 48 07.10	S 49 22 W	N 49 21 E	2756	Geog. Colburn. Moon.
			S 3 24 W	N 3 24 E	1452	
			N 74 44 E	S 74 44 W	86	
2	38 03 38.99	75 48 30.78	S 40 53 W	N 40 53 E	2231	Geog. Colburn. Moon.
			S 22 07 E	N 22 07 W	1447	
			N 79 33 E	S 79 33 W	711	
3	38 03 30.79	75 48 41.32	S 39 54 W	N 39 54 E	1838	Geog. Colburn. Moon.
			S 37 50 E	N 37 49 W	1347	
			N 67 43 E	S 67 43 W	1076	
4	38 03 33.72	75 48 44.02	S 36 16 W	N 36 16 E	1871	Geog. Colburn. Moon.
			S 37 41 E	N 37 41 W	1470	
			N 73 50 E	S 73 51 W	1112	

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

MOON BAY.

(Upper Big Annemessex River—Chart No. 7.)

	Latitude	Longitude	True bearing		Distance	
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 32.37	75 47 18.00	N 19 43 W	S 19 44 E	3987	Fairmount Church. Moon. Colburn.
			S 36 18 W	N 36 18 E	2069	
			S 23 57 W	N 23 57 E	3436	
2	38 04 36.08	75 47 11.18	N 22 50 W	S 22 50 E	3937	Fairmount Church. Moon. Colburn.
			S 38 07 W	N 38 06 E	2279	
			S 25 44 W	N 25 43 E	3625	
3	38 04 17.56	75 47 10.50	N 19 58 W	S 19 59 E	4525	Fairmount Church. Moon. Colburn.
			S 50 39 W	N 50 38 E	1843	
			S 31 08 W	N 31 07 E	3085	
4	38 03 51.40	75 47 54.40	N 4 11 W	S 4 11 E	5149	Fairmount Church. Moon. Colburn.
			S 41 37 W	N 41 37 E	384	
			S 13 35 W	N 13 35 E	1810	
5	38 03 34.46	75 47 58.21	N 28 16 W	S 28 16 E	323	Moon. Geog. Colburn.
			S 56 38 W	N 56 37 E	2788	
			S 15 13 W	N 15 13 E	1231	
6	38 03 42.22	75 48 07.10	S 49 22 W	N 49 21 E	2756	Geog. Colburn. Moon.
			S 3 24 W	N 3 24 E	1452	
			N 74 44 E	S 74 44 W	86	

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

RED CAP CREEK.

(Upper Big Annemessex River—Chart No. 7.)

Cor- ner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 26.31	75 46 37.60	N 31 27 W	S 31 28 E	4640	Fairmount Church.
			S 57 33 W	N 57 33 E	2727	Moon.
			S 40 07 W	N 40 06 E	3839	Colburn.
2	38 04 44.16	75 46 57.22	N 29 30 W	S 29 31 E	3857	Fairmount Church.
			S 40 44 W	N 40 44 E	2725	Moon.
			S 28 51 W	N 28 51 E	4040	Colburn.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

MILES.

(Upper Big Annemessex River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 52.10	75 46 51.00	N 22 00 W	S 22 00 E	5513	Fairmount Church.
			S 81 01 W	N 81 00 E	1968	Moon.
			S 49 53 W	N 49 52 E	2766	Colburn.
2	38 03 59.10	75 47 02.98	N 19 42 W	S 19 43 E	5179	Fairmount Church.
			S 71 25 W	N 71 25 E	1715	Moon.
			S 41 40 W	N 41 39 E	2701	Colburn.
3	38 04 10.22	75 46 53.34	N 23 59 W	S 24 00 E	4927	Fairmount Church.
			S 63 56 W	N 63 55 E	2095	Moon.
			S 40 37 W	N 40 36 E	3153	Colburn.
4	38 04 07.16	75 46 47.40	N 25 08 W	S 25 09 E	5086	Fairmount Church.
			S 68 08 W	N 68 08 E	2196	Moon.
			S 44 00 W	N 43 59 E	3183	Colburn.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

*Survey of Oyster Bars, Somerset County, Md.*BOUNDARIES OF CRAB BOTTOMS—continued.
COLBURN.*(Upper Big Annemessex River—Chart No. 7.)*

Corner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 25.02	75 47 30.76	N 9 29 W	S 9 29 E	6108	Fairmount Church.
			S 55 44 W	N 55 44 E	1071	Moon.
			S 50 30 W	N 50 30 E	1367	Colburn.
2	38 03 30.00	75 47 32.62	N 9 16 W	S 9 17 E	5934	Fairmount Church.
			N 62 29 W	S 62 30 E	942	Moon.
			S 44 06 W	N 44 06 E	1445	Colburn.
3	38 03 46.98	75 47 28.88	N 11 18 W	S 11 18 E	5388	Fairmount Church.
			S 81 38 W	N 81 37 E	945	Moon.
			S 34 28 W	N 34 28 E	1953	Colburn.
4	38 03 56.66	75 47 23.30	N 13 39 W	S 13 40 E	5102	Fairmount Church.
			S 66 49 W	N 66 49 E	1179	Moon.
			S 32 56 W	N 32 55 E	2307	Colburn.
5	38 03 58.06	75 47 14.60	N 16 18 W	S 16 19 E	5116	Fairmount Church.
			S 68 43 W	N 68 43 E	1409	Moon.
			S 36 50 W	N 36 50 E	2485	Colburn.
6	38 03 47.78	75 46 59.70	N 19 13 W	S 19 14 E	5568	Fairmount Church.
			S 84 31 W	N 84 30 E	1720	Moon.
			S 49 00 W	N 49 00 E	2496	Colburn.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

JACKSON ISLAND.

(South Shore Big Annemessex River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 18.76	75 50 16.42	N 53 06 E	S 53 07 W	1696	Geog.
			N 11 14 E	S 11 14 W	3627	Ford.
			N 52 15 W	S 52 16 E	4173	Has.
2	38 02 16.18	75 50 37.78	N 60 08 E	S 60 09 W	2221	Geog.
			N 19 18 E	S 19 18 W	3862	Ford.
			N 45 56 W	S 45 57 E	3799	Has.
3	38 03 05.44	75 50 32.58	S 72 45 E	N 72 44 W	1872	Geog.
			N 29 50 E	S 29 50 W	2287	Ford.
			N 71 07 W	S 71 08 E	3031	Has.
4	38 03 17.77	75 49 31.17	S 8 47 E	N 8 47 W	982	Geog.
			N 69 58 E	S 69 59 W	2475	Moon.
			N 17 40 W	S 17 40 E	1646	Ford.
5	38 03 03.08	75 48 54.81	S 83 45 E	N 83 45 W	1193	Colburn.
			N 45 17 E	S 45 17 W	1908	Moon.
			N 35 27 W	S 35 27 E	2533	Ford.
6	38 02 40.80	75 49 05.64	N 67 09 E	S 67 10 W	1601	Colburn.
			N 22 45 W	S 22 45 E	3052	Ford.
			N 60 34 W	S 60 34 E	598	Geog.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

JONES CREEK.

(South Shore Big Annemessex River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 01 55.18	75 50 19.00	N 38 10 E	S 38 11 W	2306	Geog.
			N 43 57 W	S 43 59 E	4654	Has.
			S 88 06 W	N 88 05 E	3530	Flat Cap.
2	38 02 16.18	75 50 37.78	N 60 08 E	S 60 09 W	2221	Geog.
			N 19 18 E	S 19 18 W	3862	Ford.
			N 45 56 W	S 45 57 E	3799	Has.
3	38 02 18.76	75 50 16.42	N 53 06 E	S 53 07 W	1696	Geog.
			N 11 14 E	S 11 14 W	3627	Ford.
			N 52 15 W	S 52 16 E	4173	Has.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

4	38 02 18.80	75 49 56.98	N 39 28 E	S 39 29 W	1319	Geog.
			N 56 13 W	S 56 14 E	4593	Has.
			S 77 30 W	N 77 28 E	4216	Flat Cap.
5	38 02 06.75	75 50 01.30	N 33 49 E	S 33 49 W	1714	Geog.
			N 51 21 W	S 51 23 E	4740	Has.
			S 82 47 W	N 82 46 E	4032	Flat Cap.
6	38 02 07.95	75 49 52.38	N 27 22 E	S 27 22 W	1557	Geog.
			N 53 27 W	S 53 29 E	4904	Has.
			S 82 39 W	N 82 37 E	4273	Flat Cap.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

DAUGHERTY CREEK.

(South Shore Big Annemessex River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 06.39	75 50 54.34	N 58 46 E	S 58 47 W	2769	Geog.
			N 37 36 W	S 37 37 E	3750	Has.
			S 79 10 W	N 79 09 E	2632	Flat Cap.
2	38 02 16.18	75 50 37.78	N 60 08 E	S 60 09 W	2221	Geog.
			N 19 18 E	S 19 18 W	3862	Ford.
			N 45 56 W	S 45 57 E	3799	Has.
3	38 01 55.18	75 50 19.00	N 38 10 E	S 38 11 W	2306	Geog.
			N 43 57 W	S 43 59 E	4654	Has.
			S 88 06 W	N 88 05 E	3530	Flat Cap.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

TENTH POINT.

(South Shore Big Annemessex River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 10.18	75 52 19.76	S 26 15 W	N 26 15 E	694	Flat Cap.
			N 74 16 E	S 74 17 W	4827	Geog.
			N 0 13 W	S 0 13 E	2842	Has.
2	38 02 23.42	75 52 03.18	N 46 15 E	S 46 16 W	4919	Ford.
			N 10 42 W	S 10 42 E	2440	Has.
			S 35 01 W	N 35 01 E	1314	Flat Cap.
3	38 02 32.43	75 51 27.28	N 39 58 E	S 39 59 W	4041	Ford.
			N 33 57 W	S 33 58 E	2524	Has.
			S 51 11 W	N 51 10 E	2190	Flat Cap.
4	38 02 16.18	75 50 37.78	N 60 08 E	S 60 09 W	2221	Geog.
			N 19 18 E	S 19 18 W	3862	Ford.
			N 45 56 W	S 45 57 E	3799	Has.
5	38 02 06.39	75 50 54.34	N 58 46 E	S 58 47 W	2769	Geog.
			N 37 36 W	S 37 37 E	3750	Has.
			S 79 10 W	N 79 09 E	2632	Flat Cap.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

SHANKS CREEK.

(Smith Island—Chart No. 8.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 15.10	76 01 47.78	S 88 19 E	N 88 17 W	3472	Horse.
			N 24 06 E	S 24 07 W	2535	Ewell Church.
			N 22 07 W	S 22 07 E	3138	Old Church.
2	37 57 15.78	76 02 17.53	S 88 20 E	N 88 18 W	4268	Horse.
			N 38 36 E	S 38 37 W	2932	Ewell Church.
			N 7 39 W	S 7 39 E	2909	Old Church.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

101

BOUNDARIES OF CRAB BOTTOMS—continued.

TYLERS CREEK.

(Smith Island—Charts Nos. 8 and 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 13.20	76 00 24.18	S 88 14 E	N 88 14 W	1239	Horse.
			N 26 42 W	S 26 42 E	2662	Ewell Church.
			N 48 57 W	S 48 59 E	4524	Old Church.
2	37 57 14.16	76 01 05.30	S 88 17 E	N 88 16 W	2338	Horse.
			N 2 24 W	S 2 24 E	2348	Ewell Church.
			N 38 16 W	S 38 15 E	3741	Old Church.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BIG ISLAND.

(Southwest Tangier Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 59 14.18	75 58 57.16	S 14 45 W	N 14 45 E	4257	Horse.
			S 64 53 E	N 64 51 W	6793	Janes Island Light.
			N 19 54 E	S 19 55 W	3681	Terrapin.
2	37 58 13.99	75 57 58.77	S 51 42 W	N 51 41 E	3368	Horse.
			S 79 27 E	N 79 29 W	4672	Janes Island Light.
			N 3 20 W	S 3 21 E	5499	Terrapin.
3	37 57 43.01	75 58 22.82	N 87 55 E	S 87 57 W	5238	Janes Island Light.
			N 2 57 E	S 2 57 W	6544	Terrapin.
			S 62 29 W	N 62 28 E	2257	Horse.
4	37 57 25.62	75 58 29.02	N 81 49 E	S 81 51 W	5456	Janes Island Light.
			N 4 02 E	S 4 02 W	7139	Terrapin.
			S 76 02 W	N 76 01 E	1891	Horse.
5	37 57 06.40	75 58 59.12	N 77 04 E	S 77 06 W	6366	Janes Island Light.
			N 9 32 E	S 9 33 W	7878	Terrapin.
			N 79 30 W	S 79 31 E	1050	Horse.
6	37 57 12.07	75 59 37.78	S 6 49 E	N 6 49 W	8754	Reach Hammock.
			N 80 19 E	S 80 22 W	7341	Janes Island Light.
			N 17 08 E	S 17 09 W	7931	Terrapin.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

DRUM.

(Southwest Tangier Sound—Chart No. 9.)

Corner of bottom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	38	00	18.54	75	58	43.38	S 13 00 W	N 13 00 E	6453	Horse.
							S 48 51 E	N 48 49 W	7680	Janes Island Light.
							N 34 27 E	S 34 27 W	1566	Terrapin.
2	38	00	10.56	75	57	23.66	N 38 30 W	S 38 30 E	1994	Terrapin.
							S 30 45 W	N 30 44 E	7002	Horse.
							S 37 22 E	N 37 21 W	6022	Janes Island Light.
3	37	59	33.26	75	57	20.02	N 25 24 W	S 25 25 E	3119	Terrapin.
							S 37 42 W	N 37 40 E	6015	Horse.
							S 45 15 E	N 45 13 W	5011	Janes Island Light.
4	37	59	12.86	75	56	57.37	N 28 59 W	S 29 00 E	4008	Terrapin.
							S 46 27 W	N 46 26 E	5910	Horse.
							S 46 07 E	N 46 07 W	4098	Janes Island Light.
5	37	58	47.38	75	57	15.60	N 18 27 W	S 18 27 E	4601	Terrapin.
							S 49 45 W	N 49 44 E	4974	Horse.
							S 60 04 E	N 60 03 W	3970	Janes Island Light.
6	37	58	13.99	75	57	58.77	S 51 42 W	N 51 41 E	3368	Horse.
							S 79 27 E	N 79 29 W	4672	Janes Island Light.
							N 3 20 W	S 3 21 E	5499	Terrapin.
7	37	59	14.18	75	58	57.16	S 14 45 W	N 14 45 E	4257	Horse.
							S 64 53 E	N 64 51 W	6793	Janes Island Light.
							N 19 54 E	S 19 55 W	3681	Terrapin.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

OLD HOUSE.

(Little Annesmessex River—Chart No. 9.)

	°	'	"	°	'	"	°	'	Yards.	
1	37	58	12.54	75	52	51.94	S 77 22 W	N 77 21 E	3688	Janes Island Light.
							S 36 33 E	N 36 33 W	548	Somers Cove Light.
							N 61 52 E	S 61 53 W	3176	Emmanuel Church.
2	37	58	09.83	75	52	57.62	S 78 17 W	N 78 16 E	3520	Janes Island Light.
							S 53 52 E	N 53 52 W	592	Somers Cove Light.
							N 61 43 E	S 61 45 W	3353	Emmanuel Church.
3	37	58	19.46	75	53	14.30	S 70 53 W	N 70 52 E	3176	Janes Island Light.
							S 53 53 E	N 53 53 W	1143	Somers Cove Light.
							N 69 35 E	S 69 37 W	3625	Emmanuel Church.
4	37	58	16.86	75	53	17.44	S 71 56 W	N 71 54 E	3069	Janes Island Light.
							S 59 48 E	N 59 48 W	1166	Somers Cove Light.
							N 68 46 E	S 68 48 W	3735	Emmanuel Church.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

LIGHT HOUSE.

(Little Annesmessex River—Chart No. 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 58 38.61	75 52 04.62	N 74 23 E S 35 23 W S 70 53 W	S 74 24 W N 35 23 E N 70 51 E	1912 1617 5145	Mount Pleasant Church. Somers Cove Light. Janes Island Light.
2	37 58 37.49	75 52 03.44	N 73 01 E S 37 04 W S 71 24 W	S 73 02 W N 37 04 E N 71 22 E	1893 1606 5163	Mount Pleasant Church. Somers Cove Light. Janes Island Light.
3	37 58 21.34	75 52 20.23	S 35 12 W N 64 02 E N 58 26 E	N 35 12 E S 64 03 W S 58 27 W	902 2512 2293	Somers Cove Light. Mount Pleasant Church. Emmanuel Church.
4	37 58 15.18	75 52 17.41	S 48 21 W N 59 08 E N 53 09 E	N 48 21 E S 59 09 W S 53 10 W	796 2543 2348	Somers Cove Light. Mount Pleasant Church. Emmanuel Church.
5	37 58 07.17	75 52 27.62	S 51 13 W N 57 19 E N 52 03 E	N 51 13 E S 57 20 W S 52 03 W	414 2917 2729	Somers Cove Light. Mount Pleasant Church. Emmanuel Church.
6	37 58 12.24	75 52 31.42	S 27 13 W N 61 14 E N 56 13 E	N 27 13 E S 61 15 W S 56 14 W	483 2917 2711	Somers Cove Light. Mount Pleasant Church. Emmanuel Church.
7	37 58 09.98	75 52 35.48	S 17 41 W N 60 57 E N 56 09 E	N 17 41 E S 60 58 W S 56 10 W	372 3049 2843	Somers Cove Light. Mount Pleasant Church. Emmanuel Church.
8	37 58 04.50	75 52 32.20	S 49 50 W N 57 09 E N 52 08 E	N 49 49 E S 57 10 W S 52 08 W	262 3069 2881	Somers Cove Light. Mount Pleasant Church. Emmanuel Church.
9	37 57 59.48	75 52 39.71	S 84 41 W N 51 31 E N 51 51 E	N 84 39 E N 51 30 W S 51 52 W	3941 4507 3136	Janes Island Light. Watermelon Hummock. Emmanuel Church.
10	37 57 57.55	75 52 51.96	N 78 45 E N 4 00 E S 85 13 W	S 78 45 W S 4 00 W N 85 12 E	334 7914 3610	Somers Cove Light. Flat Cap. Janes Island Light.
11	37 58 09.83	75 52 57.62	S 78 17 W S 53 52 E N 61 43 E	N 78 16 E N 53 52 W S 61 45 W	3520 592 3353	Janes Island Light. Somers Cove Light. Emmanuel Church.
12	37 58 12.54	75 52 51.94	S 77 22 W S 36 33 E N 61 52 E	N 77 21 E N 36 33 W S 61 53 W	3688 548 3176	Janes Island Light. Somers Cove Light. Emmanuel Church.

Thence from corner No. 12 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

CANCER.

(Little Annemessex River—Chart No. 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 59 19.28	75 52 02.18	S 62 55 E	N 62 54 W	1655	Emmanuel Church.
			S 20 25 W	N 20 25 E	2871	Somers Cove Light.
			S 58 11 W	N 58 09 E	5797	Janes Island Light.
2	37 59 08.74	75 52 06.27	S 75 53 E	N 75 52 W	1631	Emmanuel Church.
			S 20 55 W	N 20 55 E	2500	Somers Cove Light.
			S 60 44 W	N 60 42 E	5523	Janes Island Light.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BACK CREEK.

(Little Annemessex River—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 58 57.66	75 51 42.16	S 88 31 E	N 88 31 W	943	Emmanuel Church.
			S 38 02 W	N 38 02 E	2492	Somers Cove Light.
			S 66 56 W	N 66 53 E	5936	Janes Island Light.
2	37 58 57.48	75 51 44.76	S 88 58 E	N 88 58 W	1008	Emmanuel Church.
			S 36 52 W	N 36 51 E	2444	Somers Cove Light.
			S 66 43 W	N 66 41 E	5869	Janes Island Light.
3	37 59 11.57	75 51 37.00	S 58 22 E	N 58 21 W	940	Emmanuel Church.
			S 34 33 W	N 34 32 E	2952	Somers Cove Light.
			S 63 28 W	N 63 26 E	6258	Janes Island Light.
4	37 59 28.84	75 51 47.07	S 44 50 E	N 44 50 W	1517	Emmanuel Church.
			S 25 00 W	N 24 59 E	3322	Somers Cove Light.
			S 57 38 W	N 57 37 E	6310	Janes Island Light.
5	37 59 30.96	75 51 59.84	S 50 53 E	N 50 52 W	1818	Emmanuel Church.
			S 18 57 W	N 18 56 E	3261	Somers Cove Light.
			S 55 20 W	N 55 18 E	6066	Janes Island Light.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

LAVELLETTTE.

(Little Annemessex River—Chart No. 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 32.69	75 51 53.92	N 29 37 E	S 29 38 W	3148	Mount Pleasant Church.
			N 53 32 W	S 53 33 E	1520	Somers Cove Light.
			N 84 02 W	S 84 04 E	5175	Janes Island Light.
2	37 57 32.80	75 51 58.72	N 31 38 E	S 31 39 W	3211	Mount Pleasant Church.
			N 50 35 W	S 50 35 E	1416	Somers Cove Light.
			N 83 55 W	S 83 57 E	5047	Janes Island Light.
3	37 57 51.82	75 52 10.29	N 43 36 E	S 43 37 W	2889	Mount Pleasant Church.
			N 71 48 W	S 71 48 E	827	Somers Cove Light.
			S 88 40 W	N 88 42 E	4714	Janes Island Light.
4	37 58 03.21	75 52 07.92	N 48 29 E	S 48 29 W	2578	Mount Pleasant Church.
			N 41 54 E	S 41 55 W	2434	Emmanuel Church.
			S 81 34 W	N 81 34 E	857	Somers Cove Light.
5	37 58 13.52	75 51 56.98	N 50 17 E	S 50 18 W	2129	Mount Pleasant Church.
			N 42 20 E	S 42 21 W	1980	Emmanuel Church.
			S 67 28 W	N 67 27 E	1235	Somers Cove Light.
6	37 58 21.78	75 51 50.86	N 53 44 E	S 53 44 W	1828	Mount Pleasant Church.
			N 44 38 E	S 44 39 W	1666	Emmanuel Church.
			S 60 02 W	N 60 01 E	1505	Somers Cove Light.
7	37 58 21.84	75 51 42.60	N 49 16 E	S 49 16 W	1655	Mount Pleasant Church.
			N 38 46 E	S 38 46 W	1518	Emmanuel Church.
			S 63 41 W	N 63 41 E	1701	Somers Cove Light.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

JENKINS CREEK.

(Little Annemessex River—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 06.40	75 51 57.59	N 32 08 W	S 32 09 E	2114	Somers Cove Light.
			N 74 14 W	S 74 16 E	5243	Janes Island Light.
			S 20 40 W	N 20 39 E	5130	Sam.
2	37 57 25.62	75 52 09.39	N 35 20 W	S 35 20 E	1400	Somers Cove Light.
			N 80 41 W	S 80 43 E	4798	Janes Island Light.
			S 15 21 W	N 15 20 E	5650	Sam.
3	37 57 32.80	75 51 58.72	N 31 38 E	S 31 39 W	3211	Mount Pleasant Church.
			N 50 35 W	S 50 35 E	1416	Somers Cove Light.
			N 83 55 W	S 83 57 E	5047	Janes Island Light.
4	37 57 32.69	75 51 53.92	N 29 37 E	S 29 38 W	3148	Mount Pleasant Church.
			N 53 32 W	S 53 33 E	1520	Somers Cove Light.
			N 84 02 W	S 84 04 E	5175	Janes Island Light.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

JENKINS CREEK—Continued.

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
5	37 57 31.64	75 51 47.21	N 26 25 E	S 26 25 W	3095	Mount Pleasant Church.
			N 56 11 W	S 56 12 E	1686	Somers Cove Light.
			N 83 51 W	S 83 53 E	5358	Janes Island Light.
6	37 57 32.58	75 51 31.33	N 19 10 E	S 19 11 W	2902	Mount Pleasant Church.
			N 63 34 W	S 63 35 E	2038	Somers Cove Light.
			N 84 37 W	S 84 39 E	5773	Janes Island Light.
7	37 57 26.20	75 51 30.62	N 17 32 E	S 17 33 W	3100	Mount Pleasant Church.
			N 58 41 W	S 58 42 E	2159	Somers Cove Light.
			N 82 31 W	S 82 34 E	5819	Janes Island Light.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

KINGS ISLAND.

(*Little Annesmessex River—Chart No. 9.*)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 33.14	75 53 38.58	N 77 30 W	S 77 31 E	2410	Janes Island Light.
			S 8 51 E	N 8 50 W	5771	Sam.
			N 60 32 E	S 60 32 W	1806	Somers Cove Light.
2	37 57 37.36	75 53 30.06	N 81 38 W	S 81 39 E	2608	Janes Island Light.
			S 6 27 E	N 6 26 W	5881	Sam.
			N 60 58 E	S 60 59 W	1538	Somers Cove Light.
3	37 57 43.07	75 53 27.44	N 85 58 W	S 85 59 E	2657	Janes Island Light.
			S 5 35 E	N 5 35 W	6065	Sam.
			N 66 31 E	S 66 31 W	1389	Somers Cove Light.
4	37 57 44.74	75 53 19.82	N 86 02 W	S 86 03 E	2861	Janes Island Light.
			S 3 40 E	N 3 40 W	6038	Sam.
			N 62 12 E	S 62 13 W	1211	Somers Cove Light.
5	37 57 32.64	75 53 18.58	N 79 26 W	S 79 27 E	2937	Janes Island Light.
			S 3 33 E	N 3 33 W	5695	Sam.
			N 48 54 E	S 48 55 W	1377	Somers Cove Light.
6	37 57 32.00	75 53 12.34	N 43 14 E	S 43 15 W	1272	Somers Cove Light.
			S 1 53 E	N 1 54 W	5666	Sam.
			N 79 36 W	S 79 37 E	3105	Janes Island Light.
7	37 57 46.22	75 53 02.98	N 88 35 W	S 88 37 E	3305	Janes Island Light.
			S 0 36 W	N 0 36 E	6143	Sam.
			N 54 53 E	S 54 53 W	759	Somers Cove Light.
8	37 57 44.46	75 52 35.80	N 11 39 W	S 11 39 E	517	Somers Cove Light.
			S 88 00 W	S 88 01 E	4032	Janes Island Light.
			S 7 24 W	N 7 23 E	6134	Sam.
9	37 57 47.00	75 52 22.56	N 47 25 W	S 47 25 E	622	Somers Cove Light.
			N 89 26 W	S 89 27 E	4383	Janes Island Light.
			S 10 30 W	N 10 30 E	6274	Sam.

BOUNDARIES OF CRAB BOTTOMS—continued.

KINGS ISLAND—Continued.

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
10	37 57 25.62	75 52 09.39	N 35 20 W	S 35 20 E	1400	Somers Cove Light.
			N 80 41 W	S 80 43 E	4798	Janes Island Light.
			S 15 21 W	N 15 20 E	5650	Sam.
11	37 57 06.40	75 51 57.59	N 32 08 W	S 32 09 E	2114	Somers Cove Light.
			N 74 14 W	S 74 16 E	5243	Janes Island Light.
			S 20 40 W	N 20 39 E	5130	Sam.

Thence from corner No. 11 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

GREAT POINT.

(Entrance Little Annemessex River—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 58.46	75 53 32.95	S 9 14 E	N 9 14 W	4592	Sam.
			N 34 38 E	S 34 39 W	2494	Somers Cove Light.
			N 55 58 W	S 55 58 E	3022	Janes Island Light.
2	37 56 58.91	75 53 46.39	S 13 33 E	N 13 33 W	4677	Sam.
			N 41 05 E	S 41 05 W	2709	Somers Cove Light.
			N 52 00 W	S 52 00 E	2722	Janes Island Light.
3	37 57 48.22	75 53 58.10	N 89 35 W	S 89 35 E	1832	Janes Island Light.
			S 12 47 E	N 12 46 W	6367	Sam.
			N 79 42 E	S 79 43 W	2127	Somers Cove Light.
4	37 57 37.36	75 53 30.06	N 81 38 W	S 81 39 E	2608	Janes Island Light.
			S 6 27 E	N 6 26 W	5881	Sam.
			N 60 58 E	S 60 59 W	1538	Somers Cove Light.
5	37 57 33.14	75 53 38.58	N 77 30 W	S 77 31 E	2410	Janes Island Light.
			S 8 51 E	N 8 50 W	5771	Sam.
			N 60 32 E	S 60 32 W	1806	Somers Cove Light.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

FISHING CREEK.

(Southeast Tangier Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 43.30	75 53 53.32	S 32 40 E	N 32 39 W	2373	Sam.
			N 23 10 E	S 23 11 W	4994	Somers Cove Light.
			N 24 53 W	S 24 54 E	4658	Janes Island Light.
2	37 56 05.77	75 53 49.43	S 23 08 E	N 23 07 W	2996	Sam.
			N 25 53 E	S 25 54 W	4262	Somers Cove Light.
			N 30 45 W	S 30 46 E	4035	Janes Island Light.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

CEDAR STRAITS.

(Cedar Straits—Chart No. 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 54 43.46	75 52 59.66	N 82 48 W	S 82 48 E	153	Sam.
			S 48 12 W	N 48 11 E	2986	Fox Island Poplar.
			N 66 41 E	S 66 43 W	5092	East.
2	37 54 40.64	75 52 59.74	N 65 43 E	S 65 45 W	5131	East.
			N 52 43 W	S 52 43 E	188	Sam.
			S 49 37 W	N 49 33 E	2921	Fox Island Poplar.
3	37 54 36.20	75 54 15.22	S 6 45 W	N 6 45 E	1757	Fox Island Poplar.
			N 81 56 E	S 81 57 W	1883	Sam.
			N 20 24 E	S 20 25 W	7313	Somers Cove Light.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

4	37 54 41.87	75 54 17.75	S 4 06 W	N 4 06 E	1941	Fox Island Poplar.
			N 87 50 E	S 87 51 W	1933	Sam.
			N 11 44 W	S 11 44 E	6430	Janes Island Light.
5	37 55 19.06	75 53 58.24	S 11 42 W	N 11 41 E	3258	Fox Island Poplar.
			S 50 05 E	N 50 04 W	1841	Sam.
			N 21 11 E	S 21 12 W	5802	Somers Cove Light.
6	37 55 33.42	75 53 57.33	S 10 33 W	N 10 33 E	3738	Fox Island Poplar.
			S 39 48 E	N 39 47 W	2168	Sam.
			N 22 49 E	S 22 50 W	5343	Somers Cove Light.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BROAD CREEK.

(Western Pocomoke Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 43.19	75 50 04.56	N 47 28 E	S 47 29 W	3842	Monkey.
			N 18 57 W	S 18 58 E	1894	Watermelon Hummock.
			S 59 51 W	N 59 48 E	7983	Fox Island Poplar.
2	37 54 43.02	75 49 20.87	N 19 48 E	S 19 48 W	4916	Monkey.
			N 29 54 W	S 29 55 E	2340	East.
			N 89 40 W	S 89 43 E	5997	Sam.
3	37 54 42.50	75 50 04.82	N 31 26 E	S 31 27 W	5442	Monkey.
			N 0 12 E	S 0 12 W	2046	East.
			N 89 22 W	S 89 24 E	4823	Sam.
4	37 55 04.64	75 50 32.13	N 29 32 E	S 29 32 W	1494	East.
			N 2 15 E	S 2 15 W	3093	Watermelon Hummock.
			S 80 23 W	N 80 21 E	4151	Sam.
5	37 55 04.58	75 51 06.16	N 51 39 E	S 51 39 W	2098	East.
			N 18 25 E	S 18 26 W	3259	Watermelon Hummock.
			S 77 42 W	N 77 41 E	3259	Sam.

BOUNDARIES OF CRAB BOTTOMS—continued.

BROAD CREEK—Continued.

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
6	37 54 41.93	75 50 58.48	N 34 53 E	S 34 54 W	2517	East.
			N 12 04 E	S 12 05 W	3944	Watermelon Hummock.
			N 88 48 W	S 88 49 E	3390	Sam.
7	37 54 40.64	75 52 59.74	N 65 43 E	S 65 45 W	5131	East.
			N 52 43 W	S 52 43 E	188	Sam.
			S 49 37 W	N 49 33 E	2921	Fox Island Poplar.
8	37 54 43.46	75 52 59.66	N 82 48 W	S 82 48 E	153	Sam.
			S 48 12 W	N 48 11 E	2986	Fox Island Poplar.
			N 66 41 E	S 66 43 W	5092	East.

Thence from corner No. 8 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

WARE POINT.

(Northern Pocomoke Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 02.04	75 49 28.14	S 61 20 W	N 61 20 E	1810	Watermelon Hummock.
			S 20 06 W	N 20 05 E	2830	East.
			S 88 07 W	N 88 06 E	1860	Monkey.
2	37 57 00.82	75 48 42.30	S 73 37 W	N 73 36 E	2931	Watermelon Hummock.
			S 40 01 W	N 40 00 E	3418	East.
			S 88 09 E	N 88 08 W	635	Monkey.
3	37 56 47.45	75 48 49.97	N 62 52 E	S 62 53 W	944	Monkey.
			S 81 48 W	N 81 47 E	2633	Watermelon Hummock.
			S 42 36 W	N 42 35 E	2943	East.
4	37 55 25.60	75 48 51.05	N 15 14 E	S 15 14 W	3306	Monkey.
			N 47 15 W	S 47 16 E	3512	Watermelon Hummock.
			N 73 11 W	S 73 12 E	2050	East.
5	37 54 43.02	75 49 20.87	N 19 48 E	S 19 48 W	4916	Monkey.
			N 29 54 W	S 29 55 E	2340	East.
			N 89 40 W	S 89 43 E	5997	Sam.
6	37 55 43.19	75 50 04.56	N 47 28 E	S 47 29 W	3842	Monkey.
			N 18 57 W	S 18 58 E	1894	Watermelon Hummock.
			S 59 51 W	N 59 48 E	7983	Fox Island Poplar.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

APES HOLE.

(Northern Pocomoke Sound—Chart No. 9.)

Corner of bottom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	37	57	14.29	75	48	12.92	S 70 24 W	N 70 22 E	3818	Watermelon Hummock. East. Monkey.
							S 44 09 W	N 44 08 E	4280	
							S 17 29 W	N 17 29 E	498	
2	37	56	41.98	75	48	17.81	N 72 12 E	S 72 15 W	6816	Scot. Monkey. East.
							N 1 46 W	S 1 46 E	614	
							S 55 12 W	N 55 11 E	3472	
3	37	56	50.20	75	48	38.72	S 80 50 W	N 80 49 E	2945	Watermelon Hummock. East. Saxis Church.
							S 45 25 W	N 45 24 E	3218	
							S 70 55 E	N 70 52 W	8892	
4	37	57	02.80	75	48	31.38	S 73 57 W	N 73 56 E	3229	Watermelon Hummock. East. Monkey.
							S 42 50 W	N 42 49 E	3660	
							S 75 31 E	N 75 31 W	354	
5	37	57	22.88	75	48	49.88	S 58 58 W	N 58 57 E	3046	Watermelon Hummock. East. Monkey.
							S 30 41 W	N 30 40 E	3909	
							S 47 47 E	N 47 46 W	1134	
6	37	57	26.04	75	48	43.29	S 58 58 W	N 58 57 E	3252	Watermelon Hummock. East. Monkey.
							S 32 03 W	N 32 02 E	4091	
							S 37 13 E	N 37 13 W	1094	

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CLAM BEDS.

EXPLANATION OF DESCRIPTIONS OF BOUNDARIES.

The Maryland legislature of 1908 in an act^a passed to prescribe additional duties to be performed by the Board of Shell Fish Commissioners provided for the establishment of boundaries of certain clam beds in Pocomoke Sound, which were to be "surveyed and designated on charts" and records prepared and filed in every particular as provided for by the Maryland laws for the survey of natural oyster bars.

The clam beds specified by the law are only 3 in number, with total acreage of 506 acres, the largest bed being 180 acres and the smallest 152 acres.

The boundaries of these clam beds were surveyed and established by the Shell Fish Commission and delineated on the "Charts of Oyster Bars" published by the Coast and Geodetic Survey in a manner identical with that used for the establishment of the oyster bar boundaries. Therefore the "Explanation of descriptions of boundaries," under the heading of "Boundaries of oyster bars," to be found in another part of this publication, will apply to the clam beds.

^a For the text of this act see Appendix B of this publication.

SURVEYING METHODS OF RELOCATION OF BOUNDARIES.

For similar reasons to those given under the previous heading, the "Surveying methods of relocation of boundaries," given under the heading of "Boundaries of oyster bars," to be found in another part of this publication, will apply to clam beds.

BOUNDARIES OF CLAM BEDS.

WARE ROCK.

(Pocomoke Sound—Chart No. 9.)

Corner of bed	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 13.00	75 48 09.78	N 3 42 W	S 3 42 E	3622	Monkey.
			N 71 37 W	S 71 38 E	3230	East.
			S 73 21 W	N 73 18 E	10407	Fox Island Poplar.
2	37 55 14.60	75 48 46.62	N 11 54 E	S 11 54 W	3640	Monkey.
			N 65 09 W	S 65 09 E	2294	East.
			S 71 20 W	N 71 17 E	9486	Fox Island Poplar.
3	37 55 41.57	75 48 32.21	S 85 52 E	N 85 49 W	8251	Saxis Church.
			N 7 51 E	S 7 51 W	2676	Monkey.
			N 88 43 W	S 88 44 E	2467	East.
4	37 55 45.79	75 48 13.64	N 2 58 W	S 2 58 E	2517	Monkey.
			S 88 19 W	N 88 18 E	2964	East.
			S 67 30 W	N 67 30 W	10680	Fox Island Poplar.

GRAVEL ROCK.

(Pocomoke Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 11.66	75 47 39.42	N 15 55 W	S 15 57 E	3808	Monkey.
			N 74 39 W	S 74 41 E	4020	East.
			S 74 47 W	N 74 42 E	11174	Fox Island Poplar.
2	37 55 13.00	75 48 09.78	N 3 42 W	S 3 42 E	3622	Monkey.
			N 71 37 W	S 71 38 E	3230	East.
			S 73 21 W	N 73 18 E	10407	Fox Island Poplar.
3	37 55 45.79	75 48 13.64	N 2 58 W	S 2 58 E	2517	Monkey.
			S 88 19 W	N 88 18 E	2964	East.
			S 67 30 W	N 67 27 E	10680	Fox Island Poplar.
4	37 55 50.76	75 47 52.93	S 82 49 E	N 82 46 W	7237	Saxis Church.
			N 16 16 W	S 16 16 E	2439	Monkey.
			S 85 52 W	N 85 53 E	3525	East.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CLAM BEDS—continued.

FLAT ROCK.

(Pocomoke Sound—Charts Nos. 9 and 10.)

Corner of bed	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 34.84	75 46 56.00	N 37 26 W	S 37 27 E	3624	Monkey.
			N 86 47 W	S 86 49 E	5044	East.
			S 72 43 W	N 72 38 E	12505	Fox Island Poplar.
2	37 55 39.26	75 47 40.94	N 20 11 W	S 20 12 E	2908	Monkey.
			N 88 01 W	S 88 02 E	3837	East.
			S 70 13 W	N 70 08 E	11416	Fox Island Poplar.
3	37 56 08.82	75 47 03.84	N 49 00 W	S 49 00 E	2642	Monkey.
			S 79 52 W	N 79 50 E	4904	East.
			S 67 30 W	N 67 25 E	12700	Fox Island Poplar.
4	37 55 43.18	75 46 44.80	N 43 56 W	S 43 57 E	3607	Monkey.
			N 89 59 W	S 89 59 E	5336	East.
			S 71 56 W	N 71 51 E	12877	Fox Island Poplar.

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

Survey of Oyster Bars, Somerset County, Md.

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of the legislature of Maryland approved April 2, 1906.]

AN ACT to establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That the following sections be, and they are hereby, added to Article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis; and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie.

* * * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section. * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey, and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable, the limits and boundaries of the natural beds, bars and rocks, as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the same to the clerks of the Circuit Court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed, other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks, shall be construed in all the courts of the State to be barren bottoms, and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act; provided, that the said survey and report shall not be so construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act. * * *

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the Survey, is as follows:

An Act Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or levelling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.^a *And be it enacted*, That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses, (to be by

^a Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

them sworn or affirmed and examined) shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid, if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damages assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

APPENDIX B.—LAWS RELATING TO SURVEY OF CLAM BEDS.

[Act of the legislature of Maryland approved April 6, 1908.]

AN ACT to prescribe additional duties to be performed by the Board of Shell Fish Commissioners, to the duties already prescribed for them by Chapter 711 of the Acts of the General Assembly of Maryland of 1906.

SECTION 1. Be it enacted by the General Assembly of Maryland, That it shall be the duty of the Board of Shell Fish Commissioners, as soon after the passage of this Act as practicable, to have laid out, surveyed and designated on charts provided for such purpose, Gravel Rock, Ware Rock, and Flat Rock, being clam banks located in the waters of Pocomoke Sound, in Somerset county, and State of Maryland, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of each of the above named rocks, and they shall take true and accurate notes of said survey and make the report and perform all other duties connected with said survey as said duties are prescribed by Chapter 711 of the Acts of the General Assembly of Maryland of 1906, pertaining to natural oyster beds and bars.

SEC. 2. And be it enacted by the General Assembly of Maryland, That after said rocks shall have been surveyed as provided in Section 1 of this Act, no part of them shall be leased to any person or persons for the purpose of planting, bedding or cultivating oysters, thereon, but they shall be reserved to the public in the State of Maryland for the sole purpose of taking clams therefrom, and shall be treated in every particular as are the natural oyster beds or bars which have been or shall be surveyed by the Board of Shell Fish Commissioners under Chapter 711 of the Acts of the General Assembly of Maryland of 1906.

SEC. 3. And be it further enacted, That this Act shall take effect from the date of its passage.

^a As published in bill form.

Survey of Oyster Bars, Somerset County, Md.

117

APPENDIX C.—STATISTICS OF RESULTS OF THE COMBINED OPERATIONS OF THE GOVERNMENT AND STATE.

For a further understanding of the character of the oyster survey work that is being carried on in Maryland the following statistical tabulations of the combined results of the various operations of both the Government and State will be of value. In this connection it should be remembered that these statistics only include the new work required to supplement the large amount of existing data obtained from the archives of Coast and Geodetic Survey and utilized in the preparation of the charts and technical records.

Operation.	Anne Arundel County.	Somerset County.	Total. (a)
Natural oyster bars surveyed and delineated.....	91	37	128
Acres of natural oyster bars.....	33,666	27,566	(b) 61,232
Crab bottoms surveyed and delineated.....		54	54
Acres of crab bottoms.....		32,108	32,108
Clam beds surveyed and delineated.....		3	3
Acres of clam beds.....		506	506
Number of oyster lots leased and surveyed.....	38	185	223
Acres of oyster lots leased and surveyed.....	203	920	1,123
Boundary buoys located and planted.....	362	154	516
Triangulation landmarks established.....	123	86	209
Miles of shore line covered by triangulation.....	110	125	235
Square miles of water covered by triangulation.....	220	375	595
Miles of examination of shell bottom with chain apparatus.....	369	296	665
Oyster investigation stations occupied.....	440	679	1,119
Number of soundings over shell bottoms.....	37,049	17,904	54,953
Square miles covered by soundings and chain apparatus.....	58	47	105
Projections prepared and plotted.....	9	13	22
Leasing charts prepared.....	13	12	25
Oyster charts published.....	4	6	10
Reports published.....	2	2	3
Progress maps published.....	2	2	3

(a) Less quantities covered by statistics of more than one county.

(b) Total area of natural oyster bars of Connecticut is 5,770 acres.

APPENDIX D.—THE HAMAN OYSTER CULTURE LAW.

[Extract from First Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland had a twofold object in view:

1. To encourage an industry in oyster culture upon the barren bottoms beneath the tidewaters of the State.

2. To prevent the leasing of natural oyster bars for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoying them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the Commission."

DEFINITION OF A NATURAL OYSTER BAR.

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturalists, may be made to yield a greater number of oysters than they now produce."

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

"The definition of a natural bar which very nearly approaches a reasonable and satisfactory compromise between the extreme views given above and which has therefore been adopted by the Commission, is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Tood, v. Job T. Moore. It is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them; and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the Act of Assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the Act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and cannot be located or appropriated by any individual."

Fold-out Placeholder

This fold-out is being digitized, and will be inserted at
future date.

DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY
O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

TALBOT COUNTY MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND
REPORT OF WORK OF UNITED STATES COAST
AND GEODETIC SURVEY IN COOPERATION
WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND
SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1912

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, July 20, 1912.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, together with certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the Shell Fish Commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, 1909, 1910, 1911, and 1912.

Respectfully,

O. H. TITTMANN, *Superintendent.*

TO HON. CHARLES NAGEL,
Secretary of Commerce and Labor.

CERTIFICATION.

BALTIMORE, MD., *May 4, 1912.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in Talbot County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,
Chief of Coast and Geodetic Survey Party,
Assistant, Coast and Geodetic Survey.

Examined and certified to be correct.

BALTIMORE, MD., *May 4, 1912.*

WALTER J. MITCHELL,
CASWELL GRAVE,
BENJAMIN K. GREEN,
Maryland Shell Fish Commission.
SWEFSON EARLE,
Hydrographic Engineer.

NOTE.—Certified copies of this publication and of the charts of the natural oyster bars of Talbot County were filed in the office of the clerk of the circuit court of Talbot County and in the office of the Board of Shell Fish Commissioners on July 20, 1912.

CONTENTS.

	Page.
PROGRESS MAP.....follows	250
LETTER OF SUBMITTAL.....	3
CERTIFICATION.....	5
INTRODUCTION.....	19
Publications.....	19
Cooperation of the Coast and Geodetic Survey.....	20
Cooperation of the Bureau of Fisheries.....	20
General statement of work of Coast and Geodetic Survey.....	20
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions.....	22
Organization and equipment.....	23
Chronological statement of work.....	23
Statistics.....	25
General remarks.....	25
CHARTS AND MAPS.....	27
Charts of natural oyster bars.....	27
Leasing charts.....	28
Projections.....	29
Progress maps.....	29
BOUNDARIES OF THE COUNTY WATERS.....	30
Waters within territorial limits of county.....	30
Waters contiguous to county.....	31
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).....	33
Explanation.....	33
Method of describing triangulation stations.....	33
Descriptions of triangulation stations in county and adjacent waters.....	36
<i>Chart No. 31 (entrance to Eastern Bay and vicinity)—</i>	
Thomas Point Shoal Light.....	36
Bloody Point Bar Light.....	36
Tenk.....	36
Straight.....	37
Mouth.....	37
Matta.....	38
Batts.....	38
Turkey.....	39
Needle.....	39
Cox.....	39
Rich Neck Water Tank (<i>see also</i> Chart No. 32).....	40
Kemp Tower.....	40
Kemp.....	40
End (<i>see also</i> Charts Nos. 32 and 34).....	41
Lawn (<i>see also</i> Charts Nos. 32 and 34).....	41

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 32 (Eastern Bay and tributaries)—

	Page.
Parsons.....	42
Parsons Island Water Tank.....	42
Norman.....	42
Alley.....	43
Bonnet.....	43
Brian Reference Station.....	44
Green.....	44
Benn.....	45
Hough.....	45
Won.....	45
Nose.....	46
Snout.....	46
South.....	47
Flat.....	47
Albert.....	48
Le Seur.....	48
Attila.....	49
Tobine.....	49
Sang.....	49
Turn.....	50
Go.....	50
Divide.....	51
Princess.....	51
Philip.....	52
Granary.....	52
Morn.....	52
Bush.....	53
Nub.....	53
Wheel.....	54
Pick.....	54
Corner (Wye River).....	55
Right.....	55
Chew.....	55
Whale.....	56
Matter.....	56
Deck.....	57
Quarter.....	57
Nodim.....	57
Gusta.....	58
Sylvia.....	58
Baldwins.....	58
Cousin.....	59
Lloyd.....	59
Edward.....	60
Colonel.....	60
Shaw.....	60
Bruffs.....	61
Law.....	61
James (Miles River).....	62
Frank.....	62
Wood.....	63

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 32 (Eastern Bay and tributaries)—Continued.

	Page.
Herr.....	63
Ollie.....	64
Swing.....	64
Fair.....	65
Second.....	65
But.....	65
Aber.....	66
Two.....	66
Face.....	67
Mais.....	67
Beak.....	68
Rieman.....	68
Leeds.....	68
Johnson (<i>see also</i> Chart No. 34).....	69
Lowndes.....	69
Draw.....	70
Chap.....	70
Villa.....	71
Easton.....	71
Henderson (<i>see also</i> Chart No. 34).....	71
St. Michaels Water Tank (<i>see also</i> Chart No. 34).....	72
Millwind.....	72
Deewat.....	72
Spar.....	73
Sara.....	73
Seth.....	74
Rich Neck Water Tank (<i>see also</i> Chart No. 31).....	40
Pearson.....	74
Dixon.....	75
Lawn (<i>see also</i> Charts Nos. 31 and 34).....	41
End (<i>see also</i> Charts Nos. 31 and 34).....	41
Rod (<i>see also</i> Chart No. 34).....	75
Otto (<i>see also</i> Chart No. 34).....	75
<i>Chart No. 33 (Chesapeake Bay, Poplar Island to Sharps Island)—</i>	
Haddaway.....	76
Valliant.....	76
Poplar South.....	77
Great.....	77
Front.....	77
Wap.....	78
Southern M. E. Church.....	78
Black (<i>see also</i> Chart No. 36).....	78
Sharps Island Light (<i>see also</i> Chart No. 36).....	70
Jere (<i>see also</i> Chart No. 36).....	79
Bar.....	79
M. E. Church.....	80
Avalon.....	80
Schoolhouse Cupola.....	81
Peoples Chapel.....	81
Narrows.....	81
Eagle.....	81

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

<i>Chart No. 33 (Chesapeake Bay, Poplar Island to Sharps Island)—Continued.</i>		Page.
Dunk.....		82
Hawk.....		82
Smith.....		83
Briary.....		83
Vine (<i>see also</i> Chart No. 34).....		83
Cummings (<i>see also</i> Chart No. 34).....		84
Dan (<i>see also</i> Chart No. 34).....		84
Edmond.....		85
Warrior.....		85
Ball.....		86
Hen.....		86
Change 1910 (<i>see also</i> Chart No. 34).....		86
Chef (<i>see also</i> Charts Nos. 36 and 37).....		87
<i>Chart No. 34 (Choptank River and tributaries)—</i>		
Cummings (<i>see also</i> Chart No. 33).....		87
Dog.....		84
Rabbit.....		87
Grace.....		88
Mink.....		88
Harrison.....		89
Clump.....		89
Lawn (<i>see also</i> Charts Nos. 31 and 32).....		89
End (<i>see also</i> Charts Nos. 31 and 32).....		41
Rod (<i>see also</i> Chart No. 32).....		41
Otto (<i>see also</i> Chart No. 32).....		75
Miller.....		75
Pink.....		90
Bozman.....		90
Bozman M. E. Church Spire.....		91
Koot.....		91
Fox.....		91
Dan (<i>see also</i> Chart No. 33).....		92
Change 1910 (<i>see also</i> Chart No. 33).....		84
Nelson 3.....		86
Annette.....		92
Myrtle.....		93
Coal.....		93
Tobe.....		93
Wire.....		94
Blanco.....		94
Ned.....		95
Caulk.....		95
Fairbanks.....		95
Pine.....		96
Luna.....		96
Cabin.....		97
Skinner.....		97
Bald.....		97
Rose.....		98
Gram.....		98
Bengal.....		98

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters)—Continued.

Chart No. 34 (Choptank River and tributaries)—Continued.

	Page.
Eastman.....	99
Woodill.....	99
Delta.....	100
Marion.....	100
Willis.....	100
Neptune.....	101
Venus.....	101
Mars.....	101
Royal.....	102
Grave.....	102
Ray.....	102
Willey.....	103
Judge.....	103
Thelma.....	104
Elmore.....	104
Beverly.....	104
Samuel.....	105
Ansley.....	105
Harper.....	106
Taft.....	106
Hopkins.....	106
Spencer.....	107
Marshall.....	107
Clark.....	108
Holly.....	108
Marsh.....	109
Cedar.....	109
Ross.....	109
Cook.....	110
Peary.....	110
Irish.....	111
Roys.....	111
Pont.....	112
Sticky.....	112
Vue.....	113
Ila.....	113
Creek.....	113
Benoni 2.....	114
Mutton.....	114
Tred.....	115
Bellevue.....	115
Tar.....	115
Peck.....	116
Tall.....	116
Plain.....	116
Spin.....	117
Martin.....	117
Neva.....	118
Robertson.....	118
Stretch.....	119
May.....	119

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 34—(Choptank River and tributaries)—Continued.

	Page.
Peebee.....	119
Neck.....	120
Stab.....	120
Water.....	120
Radcliffe.....	121
Bateman.....	121
Melon.....	121
Gash.....	122
Camden.....	122
Blossom.....	123
Wall.....	123
Aye.....	123
Hunter.....	124
Weave.....	124
Twin.....	125
Toe.....	125
Trippe.....	125
Venture.....	126
Plow.....	126
Higher.....	127
All.....	127
Cam.....	127
Deux.....	128
Crack.....	128
Mistle.....	129
Layor.....	129
Borough.....	129
Golds.....	130
Mud.....	130
Town.....	131
Riverview (<i>see also</i> Chart No. 35).....	131
Weather Bureau Staff (<i>see also</i> Chart No. 35).....	131
First (<i>see also</i> Chart No. 35).....	132
Bach (<i>see also</i> Chart No. 35).....	132
Boone (<i>see also</i> Chart No. 35).....	132
Enter (<i>see also</i> Chart No. 35).....	133
Straw (<i>see also</i> Chart No. 35).....	133
Delahay (<i>see also</i> Chart No. 35).....	134
Kent (<i>see also</i> Chart No. 35).....	134
Harry (<i>see also</i> Chart No. 35).....	134
Charles (<i>see also</i> Chart No. 35).....	135
Potato (<i>see also</i> Chart No. 35).....	135
Ritter (<i>see also</i> Chart No. 35).....	136
Show (<i>see also</i> Chart No. 35).....	136
Kit (<i>see also</i> Chart No. 35).....	136
Moke (<i>see also</i> Chart No. 35).....	137
Poco (<i>see also</i> Chart No. 35).....	137
Healey (<i>see also</i> Chart No. 35).....	137
Maslin (<i>see also</i> Chart No. 35).....	138
Mean (<i>see also</i> Chart No. 35).....	138
Jay (<i>see also</i> Chart No. 35).....	139

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 34 (Choptank River and tributaries)—Continued.

	Page.
Berry (<i>see also</i> Chart No. 35).....	139
Landeye (<i>see also</i> Chart No. 35).....	139
Choptank River Light (<i>see also</i> Charts Nos. 35 and 37).....	140
St. Michaels Water Tank (<i>see also</i> Chart No. 32).....	140
St. Michaels P. E. Church Spire.....	72
Margo.....	140
Gibbs.....	141
Long.....	141
Beg.....	141
Search.....	142
Tug.....	142
Hunting.....	143
Spree.....	143
Whit.....	144
Dorrance.....	144
Tang.....	145
Johnson (<i>see also</i> Chart No. 32).....	69
Henderson (<i>see also</i> Chart No. 32).....	71
Bethel.....	145
Fig.....	145
Doctor.....	146
McConnell.....	146
Kirk.....	147
Ham.....	147
Comb.....	148
Hall.....	148
Barnett.....	149
Maiden.....	149
Stony.....	150

Chart No. 35 (Upper Choptank River)—

Riverview (<i>see also</i> Chart No. 34).....	131
Weather Bureau Staff (<i>see also</i> Chart No. 34).....	131
First (<i>see also</i> Chart No. 34).....	132
Bach (<i>see also</i> Chart No. 34).....	132
Boone (<i>see also</i> Chart No. 34).....	132
Enter (<i>see also</i> Chart No. 34).....	133
Straw (<i>see also</i> Chart No. 34).....	133
Delahay (<i>see also</i> Chart No. 34).....	124
Kent (<i>see also</i> Chart No. 34).....	134
Harry (<i>see also</i> Chart No. 34).....	134
Charles (<i>see also</i> Chart No. 34).....	135
Potato (<i>see also</i> Chart No. 34).....	135
Ritter (<i>see also</i> Chart No. 34).....	136
Show (<i>see also</i> Chart No. 34).....	136
Kit (<i>see also</i> Chart No. 34).....	136
Moke (<i>see also</i> Chart No. 34).....	137
Poco (<i>see also</i> Chart No. 34).....	137
Healey (<i>see also</i> Chart No. 34).....	137
Maslin (<i>see also</i> Chart No. 34).....	138
Mean (<i>see also</i> Chart No. 34).....	138
Jay (<i>see also</i> Chart No. 34).....	139

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations in county and adjacent waters—Continued.

Chart No. 35 (Upper Choptank River)—Continued.

	Page.
Berry (<i>see also</i> Chart No. 34).....	139
Landeye (<i>see also</i> Chart No. 34).....	139
Choptank River Light (<i>see also</i> Charts Nos. 34 and 37).....	140
Chlora.....	150
Trappe.....	151
Lan.....	151
Rice.....	152
Inez.....	152
Gis.....	153
Crubin.....	153
Black Beacon.....	153
Howells.....	154
Red.....	154
Double.....	155
Boling.....	155
Rear.....	156
Chancellor.....	156
Barber.....	157
Duck.....	157
Jam.....	158
Spindle.....	158
Bank.....	158
Raccoon.....	159
Blind.....	159
Up.....	159
Myrtle.....	160
Hut.....	160
House.....	161
Saw.....	161
Wick.....	161
War.....	162
Gander.....	162
Chief.....	163
Shell.....	163
Whitehall.....	164
Ferry.....	164
Shoal.....	165
E. Cambridge Tall Stack.....	165
E. Cambridge Spire.....	165
Cambridge Stand Pipe.....	165
Cambridge.....	165
Hambrooks Bar Beacon.....	166
Command.....	166
Dicks Water Tank.....	167
Howard.....	167
Toot.....	167
Le Compte.....	168
Large Water Tank.....	168
Castle.....	168

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.
 Descriptions of triangulation stations in county and adjacent waters—Continued.

<i>Chart No. 36</i> (Chesapeake Bay, vicinity of Little Choptank River)—	Page.
Sharps Island Light (<i>see also</i> Chart No. 33).....	79
Jere (<i>see also</i> Chart No. 33).....	79
Black (<i>see also</i> Chart No. 33).....	78
Chef (<i>see also</i> Charts Nos. 33 and 37).....	87
Cook Point Windmill (<i>see also</i> Chart No. 37).....	169
Brannock (<i>see also</i> Chart No. 37).....	170
Robins (<i>see also</i> Chart No. 37).....	169
James (Little Choptank River) (<i>see also</i> Chart No. 37).....	170
<i>Chart No. 37</i> (Little Choptank River and tributaries)—	
Choptank River Light (<i>see also</i> Charts Nos. 34 and 35).....	140
Corner (Choptank River).....	170
Dot.....	171
Chef (<i>see also</i> Charts Nos. 33 and 36).....	87
Cook Point Windmill (<i>see also</i> Chart No. 36).....	169
Brannock (<i>see also</i> Chart No. 36).....	170
Robins (<i>see also</i> Chart No. 36).....	169
James (Little Choptank River) (<i>see also</i> Chart No. 36).....	170
BOUNDARIES OF OYSTER BARS:	
Explanation.....	172
Method of describing boundaries.....	173
Surveying methods for relocation of boundaries.....	174
Boundaries of natural oyster bars in county ¹ —	
<i>Chart No. 31</i> (entrance to Eastern Bay and vicinity)—	
Poplar Island (<i>see also</i> Chart No. 33).....	177
Lows Point (<i>see also</i> Chart No. 33).....	178
Marys Delight.....	178
Wades Point.....	179
Sedge Marsh.....	179
Rich Neck.....	180
Tilghmans Point (<i>see also</i> Chart No. 32).....	180
Upper Harris Creek (<i>see also</i> Charts Nos. 32 and 34).....	181
<i>Chart No. 32</i> (Eastern Bay and tributaries)—	
Tilghmans Point (<i>see also</i> Chart No. 31).....	180
Upper Hill.....	181
Aldridges Discovery.....	182
Horseshoe.....	182
Turtle Back.....	182
Sea Turtle.....	183
Bozman Neck.....	183
Hambleton Hill.....	184
West End.....	184
Hambleton.....	185
Tidemill.....	185
Scotland.....	186
Deep Water Point.....	186
Ash Craft.....	187
Second Point (<i>see also</i> Chart No. 34).....	187
Wild Ground.....	188
Sycamore.....	188
East End.....	189

¹ See separate publications for boundaries of natural bars in adjacent counties.

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

Chart No. 32 (Eastern Bay and tributaries)—Continued.

	Page.
Herring Island.....	189
Wye Town.....	190
Bruffs Island.....	190
Shaw Bay Hill.....	191
Race Horse (Talbot County).....	191
Winders Bank.....	192
Poplar Point.....	192
Juniper.....	193
Upper Harris Creek (<i>see also</i> Charts Nos. 31 and 34).....	181

Chart No. 33 (Chesapeake Bay, Poplar Island to Sharps Island)—

Poplar Island (<i>see also</i> Chart No. 31).....	177
Lows Point (<i>see also</i> Chart No. 31).....	178
Poplar Island Narrows.....	193
Bay Hundred.....	194
Pone.....	195
Stone (<i>see also</i> Chart No. 36).....	195
Clay Bank (<i>see also</i> Chart No. 36).....	196
Sharps (<i>see also</i> Charts Nos. 36 and 37).....	196
Black Walnut (<i>see also</i> Charts Nos. 36 and 37).....	197
Sands.....	197
Pleasant Hill (<i>see also</i> Charts Nos. 34 and 36).....	198
Church Hill (<i>see also</i> Chart No. 34).....	198
Wild Cherry Tree.....	199
Turnrow (<i>see also</i> Chart No. 34).....	199
Tilghman Wharf.....	200
Change.....	200
Eagle Point.....	201
Turkey Neck.....	201
Mill Point.....	202
Hunts.....	202
Seths Point.....	203
Lodges.....	203
Walnut.....	204
Smith Point.....	204
Little Neck (<i>see also</i> Chart No. 34).....	205

Chart No. 34 (Choptank River and tributaries)—

Little Neck (<i>see also</i> Chart No. 33).....	205
Rabbit Island.....	205
Upper Harris Creek (<i>see also</i> Charts Nos. 31 and 32).....	181
Pleasant Hill (<i>see also</i> Charts Nos. 33 and 36).....	198
Dawson.....	206
Church Hill (<i>see also</i> Chart No. 33).....	198
France.....	206
Great Marsh.....	207
Turnrow (<i>see also</i> Chart No. 33).....	199
Long Point Woods.....	207
Great Bar.....	208
Brown.....	208
Deep Neck.....	209
Mulberry Point.....	209
Broad Creek Middleground.....	210

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

Chart No. 34 (Choptank River and tributaries)—Continued.

	Page.
Well Point.....	210
Pompes.....	211
Coopers Point.....	211
Judys Point.....	212
Brushy Point.....	212
Willeys Island Flats.....	212
Holland Point.....	213
Harrison.....	214
Cedar Point.....	214
Drum Point.....	214
Joe Harris Flats.....	215
Pin Cushion.....	215
Willeys Island.....	216
Fox.....	216
Royston.....	217
Irish Creek.....	217
Choptank Lumps (see also Chart No. 37).....	218
Benoni (see also Chart No. 37).....	219
Light House (see also Charts Nos. 35 and 37).....	219
Back Shore (see also Charts Nos. 35 and 37).....	220
Bachelor Point (see also Chart No. 35).....	220
Fox Hole.....	221
Stone Church (see also Chart No. 35).....	221
Town Point.....	222
Stewart Island.....	222
Goose Neck.....	223
Pecks Point.....	223
Mares Point.....	224
Louis Cove.....	224
Bamings Cove.....	225
Old House Point.....	225
Trippe.....	226
Bakers Cove.....	226
Marshy.....	227
Flatty.....	227
Orem.....	228
Double Mills.....	228
Johnston.....	229
Camden Point.....	229
Watermelon Point.....	229
Hopkins (see also Chart No. 35).....	230
Willis (see also Chart No. 35).....	230
Island Creek (see also Chart No. 35).....	231
Matthews (see also Chart No. 35).....	232
Second Point (see also Chart No. 32).....	187
Old Orchard.....	232
Gibsons Flats.....	233
Bazzles Hill.....	233
Long Point.....	234
Barnett.....	234
Cox.....	235

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars in county—Continued.

Chart No. 35 (Upper Choptank River)—

	Page.
Stone Church (<i>see also</i> Chart No. 34).....	221
Bachelor Point (<i>see also</i> Chart No. 34).....	220
Light House (<i>see also</i> Charts Nos. 34 and 37).....	219
Back Shore (<i>see also</i> Charts Nos. 34 and 37).....	220
Hopkins (<i>see also</i> Chart No. 34).....	230
Willis (<i>see also</i> Chart No. 34).....	230
Island Creek (<i>see also</i> Chart No. 34).....	231
Matthews (<i>see also</i> Chart No. 34).....	232
Chlora Point.....	235
Beacons.....	236
La Trappe.....	236
Howells Point.....	237
Dickinson.....	238
Kirby.....	238
Scraping Line.....	239
Bolingbroke Sand.....	239
The Black Buoy.....	239
Sugar Loaf.....	240
Chancellor Point.....	240
British Harbour.....	241
Goose Point.....	241
Mill Dam.....	242
Jamaica Point.....	242
Spar Buoy.....	242

Chart No. 36 (Chesapeake Bay, vicinity of Little Choptank River)—

Clay Bank (<i>see also</i> Chart No. 33).....	196
Sharps (<i>see also</i> Charts Nos. 33 and 37).....	196
Stone (<i>see also</i> Chart No. 33).....	195
Black Walnut (<i>see also</i> Charts Nos. 33 and 37).....	197

Chart No. 37 (Little Choptank River and tributaries)—

Sharps (<i>see also</i> Charts Nos. 33 and 36).....	196
Black Walnut (<i>see also</i> Charts Nos. 33 and 36).....	197
Choptank Lumps (<i>see also</i> Chart No. 34).....	218
Benoni (<i>see also</i> Chart No. 34).....	219
Light House (<i>see also</i> Charts Nos. 34 and 35).....	219
Back Shore (<i>see also</i> Charts Nos. 34 and 35).....	220

APPENDICES:

Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.....	243
Appendix B.—“The Haman Oyster Culture Law” (extract from Second Report of Shell Fish Commission).....	247
Appendix C.—Summary of the particular surveying operations which constitute an “oyster survey” as now being carried on in Maryland.....	248
Appendix D.—Statistics of results of the combined operations of the Government and State..	250

SURVEY OF OYSTER BARS, TALBOT COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws¹ authorizing the work and the natural division of the surveying operations² of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.³ The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey in charge of the work of that service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.⁴

The publications prepared and issued by the State under the direction of the Shell Fish Commission consist of annual reports⁵ of all the operations of the Commission performed under the provisions of the laws of Maryland,⁶ including results of biological

¹ See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

² See Appendix C for a summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.

³ These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C. The publications now ready for issue are those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, St. Marys, Baltimore, Kent, Queen Annes, and Talbot Counties.

⁴ The technical records and charts for each county are published separately on account of the requirements of the oyster-culture laws of the State and the practical considerations which make it desirable to have each county "opened up" for oyster culture as soon as practicable after the completion of its survey. For these reasons and the fact that these reports are each arranged for distribution and use in one county only without reference to other published records, much of the text of this publication is of necessity identical with similar previous publications for other counties.

⁵ These reports can be obtained by application to the Shell Fish Commission, Marine Bank Building, Baltimore, Md. They are issued annually in October, and the first, second, third, and fourth reports are now available for distribution.

⁶ See Appendix B for an extract from the "Second Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman oyster-culture law."

and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.¹

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential as a foundation for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.² A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL STATEMENT OF WORK OF COAST AND GEODETIC SURVEY.³

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need very little other summary than is indicated by the published "Charts of Natural Oyster Bars" and the index of hydrographic projections and triangulation stations shown on the county progress maps attached to each report.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, assistant, Bureau of Fisheries.

³ For a detail statement of the very large amount of excellent oyster-survey work of the Maryland Shell Fish Commission see the "Annual Reports of the Maryland Shell Fish Commission."

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars but also to the Government for any future work it may do in the regions covered by the oyster-survey operations.

The hydrographic projections and published charts are prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shellfish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to and permanently fixed by published technical descriptions which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way, and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County":

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster-bar and other boundaries established. At the same time the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last 65 years.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY IN TALBOT COUNTY.

INSTRUCTIONS.

The following letters, together with the laws¹ of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the survey at Washington, have proved very beneficial to the work and are greatly appreciated:

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His Excellency Hon. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector * * *.

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the Commissioners, prepare a program of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,
U. S. C. & G. S. Steamer "Endeavor," Baltimore, Md.

¹ For these laws see Appendix A.

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the field and the preparation for publication of oyster charts and technical records in the office at Washington.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house-boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster*, the Coast and Geodetic Survey party has had the constant use of the large launch *Inspector* and several other boats furnished by its own service, and the occasional use of the Bureau of Fisheries launch *Canwasback*¹ and the steamer *Governor McLane*² of the State Fishery Force.

The greater part of the equipment of instruments for the operations of both the Government and State has been furnished by the Coast and Geodetic Survey, and consists of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.

The field work of the Coast and Geodetic Survey in Talbot County³ dates from July 6, 1909, when the Maryland Shell Fish Commission house-boat *Oyster* was towed by the State Fishery Force steamer *Governor McLane* to an anchorage in the northern part of Prospect Bay near the southern entrance to Kent Narrows. From this harbor as headquarters a few additional triangulation observations were made in Kent County, although the greater part of the work was confined to Talbot and Queen Annes Counties.

On July 22, 1909, the house-boat was moved to the vicinity of Rockhall, and all field work in Talbot County was discontinued until August 13, 1909, when the *Oyster* was shifted back to Eastern Bay side of Kent Narrows, where she remained only two weeks. During this period Governor Crothers and party visited the house-boat and thoroughly examined into the manner and methods of the work of the Maryland oyster survey.

On August 28, 1909, the *Oyster* was towed to Haddaway Cove in Talbot County, where she stayed for only three days on account of the exposed position of the anchorage.

On August 31, 1909, the *Oyster* changed her anchorage to the very snug harbor inside of Poplar Island, where she remained until all the open Chesapeake Bay work was practically completed as far south as Tilghmans Island. While at this anchorage, one subparty living on shore was engaged on triangulation in Harris Creek with hired boats and an extra party of hands.

¹ By courtesy of Dr. H. F. Moore, United States Bureau of Fisheries.

² By courtesy of Capt. James A. Turner, commanding.

³ The field work of Talbot County was so intermixed with that of Queen Annes and Dorchester Counties that the chronological statement of the work in one of these counties necessarily includes a considerable part of the work of the other two counties.

Survey of Oyster Bars, Talbot County, Md.

On September 22, 1909, the house-boat was towed to Dun Cove in Harris Creek. From this anchorage the triangulation of Harris Creek, as well as a considerable part of Broad Creek, was completed.

On October 16, 1909, the house-boat was moved back to Eastern Bay and tied up at the railway wharf at Claiborne. From this point the triangulation of Eastern Bay and its northern tributaries west of Kent Narrows was practically completed.

On October 29, 1909, the *Oyster* was moved to an anchorage in Tilghmans Creek, which is a branch of the Miles River. The next day completed a month's field work, which was notable as far as triangulation was concerned, on account of the number of stations which were established, marked, described, and located by observations. This number was 108, which is considerably larger than any previous month's record. A good part of this work was carried on by subparty living on shore at Cambridge.

On December 1, 1909, the house-boat *Oyster* was moved from Tilghmans Creek, where she had been for over a month, to an anchorage off St. Michaels. From this harbor the remaining triangulation of Wye River and Miles River was practically completed.

On December 21, 1909, active field work in Talbot County for the calendar year was closed at St. Michaels, but a signal-building subparty continued field work from quarters on shore at Oxford for two days longer.

On December 24, 1909, the field season for the Government parties was officially closed, but the monthly employees remained on the house-boat at Baltimore preparing launches and boats for the winter. All officers were on leave from the 25th to 31st.

On January 3, 1910, which was the first working day of the year, the winter's office work commenced, and the repairs to launches and construction of triangulation monuments were taken up on the house-boat *Oyster* by the foreman and two men.

The office work, which consisted of the completion of records, revising descriptions of location of triangulation stations, triangulation computations, oyster-bar computations, preparation of manuscripts of technical publications, drafting and scaling boundaries of oyster bars, etc., continued without a break, except as noted in the following paragraph.

During the period covered by the winter's office work the Maryland Legislature was in session, and as the consideration of oyster legislation formed a very important and prominent part of its proceedings, considerable time of the chief of party and his officers was expended in gathering and imparting information requested by various State officials.

On March 14, 1910, a subparty was organized and put in the field to complete certain necessary details of triangulation in Talbot and Dorchester Counties. This party first went to St. Michaels, then to Cambridge, and finally to Oxford, where the main party on the house-boat was joined at the end of April.

On April 30, 1910, the house-boat *Oyster* was towed from Baltimore by the State steamer *McLane* to an anchorage in Tar Creek, near Bellevue. While at this harbor the house-boat was cleaned, painted, and generally overhauled for the season's work, and at the same time triangulation was being carried on to completion in Tred Avon River, Island Creek, and other tributaries of lower Choptank River.

On May 30, 1910, the house-boat shifted her anchorage to Tred Avon River off Oxford, where she remained until the practical completion of all the remaining triangulation and other oyster survey work in Talbot County except in the upper Choptank River.

On June 30, 1910, the *Oyster* was towed to an anchorage off Cambridge, and from this point the oyster survey work of Talbot County in upper Choptank River was carried on to completion, together with that of Dorchester County in the adjacent region.

On July 20, 1910, the house-boat *Oyster* was moved to the Patuxent River off Solomons Island, and no further field work was done in Talbot County except from June 20 to June 21, 1912, when a small party was put in the field to complete certain necessary details of triangulation in Talbot and Dorchester Counties.

The office work connected with the oyster survey of Talbot County, including the computation of geographic information and the drafting necessary for the preparation for publication of the oyster charts and the technical records of that county, was carried on intermittingly with the office work of other counties from the beginning of the field work in Talbot County on July 6, 1909, to the time of filing of the certified oyster charts and technical records in the archives of the Maryland Shell Fish Commission and with the clerk of the circuit court of Talbot County on July 20, 1912.

STATISTICS.¹

Landmarks and triangulation signals erected.....	315
Monuments planted to mark triangulation stations.....	311
Triangulation stations occupied for observations of horizontal angles.....	308
Old triangulation stations recovered.....	30
New triangulation stations established.....	306
Total old and new triangulation stations marked and described.....	336
Linear miles of shore line covered by triangulation (approximate).....	230
Square miles covered by triangulation (approximate).....	240
Hydrographic projections prepared and completed as records of oyster boundaries.....	14
Triangles computed.....	672
Geographic positions computed.....	330
Corners of oyster boundaries established by computation.....	671
Back azimuths and distances computed from corners of boundaries to triangulation stations.....	2, 013
Descriptions of triangulation stations prepared for publication.....	336
Descriptions of oyster boundaries prepared for publication.....	132
"Charts of Natural Oyster Bars" prepared for publication.....	7
Progress map prepared for publication.....	1

GENERAL REMARKS.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

¹ These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of this county, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland. See Appendix D of this publication for "Statistics of results of combined operations of the Government and the State."

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore, of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unfailing tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the Commission, who, as editor of the Commission's annual report and commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Mr. Benjamin K. Green, treasurer of the Commission, who has looked after the equipment and commissary of the house-boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Mr. Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

CHARTS AND MAPS.¹

CHARTS OF NATURAL OYSTER BARS.

The charts of the natural oyster bars of Talbot County published by the Coast and Geodetic Survey from results of the surveys of the Government in cooperation with the Maryland Shell Fish Commission consist of seven sheets covering all the oyster-producing waters of that county. They are published on the large scale of 1 part in 20,000 (approximately $3\frac{1}{16}$ inches to a statute mile) and are constructed on polyconic projections; and all information shown on them is based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the circuit court of Talbot County and in the office of the Maryland Shell Fish Commission, as required by the oyster laws of Maryland.

In addition to the oyster bar and other boundaries, the charts show the location and name of all landmarks (United States Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography² necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the heading "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a particular oyster bar or landmark which is only known by name, consult the "Contents" and

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² Much of the detail of the inshore topography was obtained from the excellent map of Talbot County, prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the United States Geological Survey.

the desired chart and general location will be indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shell fish industries. The 1-fathom contour (6 feet) and the 5-fathom curve (30 feet) correspond in a general way to the inner and outer limits of all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars, and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with Talbot County are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart within the boundaries of the different shell fish bottoms.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Talbot County, like those for Anne Arundel, Somerset, Wicomico, Worcester, Calvert, Charles, St. Marys, Baltimore, Kent, and Queen Annes Counties, have been prepared under the direction of the hydrographic engineer of the Commission. They are constructed on polyconic projections on the scales of 1 part in 5,000 or 1 part in 10,000, as the needs of oyster culture may require, and the information shown on them is based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to the area under consideration, and

prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as possible.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in the Marine Bank Building at Baltimore.

PROJECTIONS.

The polyconic projections¹ covering Talbot County waters are 14 in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, but the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission were plotted by the draftsman of the Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the archives of the Shell Fish Commission.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the United States Coast and Geodetic Survey in Talbot County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress maps² accompanying the first and second annual reports of the Maryland Shell Fish Commission were prepared under the direction of the hydrographic engineer of the Commission. They are on the scale of 1 part in 400,000, and show the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey.

¹ For the scheme of these projections see the progress map at the end of this publication.

² These maps and reports can be obtained by application to Maryland Shell Fish Commission, Marine Bank Building, Baltimore, Md.

BOUNDARIES OF THE COUNTY WATERS.¹

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line² between the waters "within the territorial limits" of Talbot County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the "oyster" charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Commencing at the head of the oyster-producing waters of Wye River on the channel boundary line between Talbot County and Queen Annes County; thence following the channel boundary line between Talbot County and Queen Annes County down the upper Wye River to a point situated in the vicinity of the eastern end of Wye Island; thence continuing down the channel of the branch of Wye River running south of Wye Island along the boundary line between Talbot County and Queen Annes County, as laid down on "Chart No. 32, Natural Oyster Bars, Maryland," to the mouth of Wye River; thence continuing along the boundary line between Talbot County and Queen Annes County, as laid down on "Chart No. 32, Natural Oyster Bars, Maryland," passing into Miles River in a curved line about half way between Herring Island and Bennett Point and then down Miles River to a point situated about $1\frac{1}{2}$ miles northeast of Tilghmans Point in the Eastern Bay entrance of Miles River; thence continuing on the boundary line between Talbot County and Queen Annes County in Eastern Bay as laid down on "Charts Nos. 31 and 32, Natural Oyster Bars, Maryland," to a point situated in the Chesapeake Bay entrance of Eastern Bay defined by the intersection of the boundary line between Talbot County and Queen Annes County and a straight line between a point on Kent Point on the southern extremity of Kent Island defined by $3^{\circ} 50' 05.1''$ and longitude $76^{\circ} 22' 06.2''$ and a point situated on Wades Point on the eastern side of the entrance of Eastern Bay defined by latitude $38^{\circ} 49' 34.2''$ and longitude $76^{\circ} 18' 04.5''$; thence in a straight line across the eastern half of the Chesapeake Bay entrance of Eastern Bay to a point on Wades Point defined by latitude $38^{\circ} 49' 34.2''$ and longitude $76^{\circ} 18' 04.5''$; thence in a southerly direction along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on Lows Point defined by latitude $38^{\circ} 46' 33.4''$ and longitude $76^{\circ} 20' 07.4''$; thence in a straight line across the northern entrance of Poplar Island Narrows to a point situated on the northern end of Poplar Island defined by latitude $38^{\circ} 46' 42.8''$ and longitude $76^{\circ} 22' 25.0''$; thence along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the western shore of

¹ For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

² See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

³ Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

Poplar Island to a point situated on the southern end of the main part of Poplar Island defined by latitude $38^{\circ} 45' 17.5''$ and longitude $76^{\circ} 22' 43.6''$; thence in a straight line across an inlet into Poplar Island Harbor to a point situated on the western extremity of the detached part of Poplar Island known as Coaches Neck defined by latitude $38^{\circ} 45' 08.8''$ and longitude $76^{\circ} 22' 35.3''$; thence along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the western and southern shore of a detached part of Poplar Island known as Coaches Neck to a point situated on its eastern extremity defined by latitude $38^{\circ} 44' 59.4''$ and longitude $76^{\circ} 21' 46.5''$; thence in a straight line across the southern entrance of Poplar Island Narrows to a point situated on the mainland on Great Marsh Point defined by latitude $38^{\circ} 44' 56.0''$ and longitude $76^{\circ} 20' 34.2''$; thence in a southerly direction along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on the northern side of the entrance to Front Creek defined by latitude $38^{\circ} 43' 47.5''$ and longitude $76^{\circ} 20' 34.0''$; thence in a straight line across the Chesapeake Bay entrance of Front Creek and Knapps Narrows to a point situated on the southern side of Chesapeake Bay entrance of Knapps Narrows defined by latitude $38^{\circ} 43' 14.8''$ and longitude $76^{\circ} 20' 27.6''$; thence in a southerly direction along the mean low water line or across the mouth of all inlets less than 100 yards in width, as the case may be, of the eastern shore of Chesapeake Bay to a point situated on Blackwalnut Point on the northwestern side of the Chesapeake Bay entrance of lower Choptank River defined by latitude $38^{\circ} 40' 06.6''$ and longitude $76^{\circ} 20' 24.7''$; thence in a straight line ending at a point situated on Cook Point on the southeastern side of the Chesapeake Bay entrance of lower Choptank River defined by latitude $38^{\circ} 37' 55.7''$ and longitude $76^{\circ} 17' 28.7''$ to a point on this line defined by its intersection with boundary line in lower Choptank River between Talbot County and Dorchester County as laid down on "Charts Nos. 33, 34, 36, and 37, Natural Oyster Bars, Maryland;" thence along the boundary line in lower Choptank River between Talbot County and Dorchester County as laid down on "Charts Nos. 33, 34, 36, and 37, Natural Oyster Bars, Maryland," to the entrance of upper Choptank River between Castle Haven Point and Island Creek; thence continuing along the boundary line between Talbot County and Dorchester County up the channel of upper Choptank River pass the city of Cambridge around Chancellors Point and pass the town of Choptank, all as laid down on "Chart No. 35, Natural Oyster Bars, Maryland;" thence continuing up the channel boundary line of upper Choptank River between Talbot County and Dorchester County to the head of the oyster-producing waters.

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the United States Coast and Geodetic Survey, "which said copies shall be filed in the office of the said commissioners in the city of Baltimore," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county and the waters contiguous to but not within the territorial limits of adjacent counties.

This boundary line has been delineated on the "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and is technically described and defined as follows:

Commencing at a point in the Chesapeake Bay entrance of Eastern Bay defined by the intersection of the boundary line between Talbot County and Queen Annes County, as laid down on "Chart No. 31, Natural Oyster Bars, Maryland," with a straight line across the Chesapeake Bay entrance of Eastern Bay,

defined at its western end by a point situated on the southern extremity of Kent Island in latitude $38^{\circ} 50' 05.1''$ and longitude $76^{\circ} 22' 06.2''$ and defined at its eastern end by a point situated on Wades Point on the eastern side of the entrance of Eastern Bay in latitude $38^{\circ} 49' 34.2''$ and longitude $76^{\circ} 18' 04.5''$; thence along the boundary line between Talbot County and Queen Annes County, passing into Chesapeake Bay between Kent Island and Poplar Island, as laid down on "Chart No. 31, Natural Oyster Bars, Maryland," to a point situated in Chesapeake Bay about $3\frac{1}{2}$ miles southwest of Bloody Point Bar Light defined by latitude $38^{\circ} 46' 06.6''$ and longitude $76^{\circ} 26' 37.1''$; thence in a straight line in a southerly direction with Chesapeake Bay to a point situated in Chesapeake Bay about $3\frac{5}{8}$ miles east of Hog Point and $5\frac{3}{4}$ miles southwest of Poplar Island, defined by latitude $38^{\circ} 42' 33.4''$ and longitude $76^{\circ} 27' 40.0''$; thence in a straight line in a southerly direction with Chesapeake Bay to a point situated in Chesapeake Bay about $5\frac{1}{2}$ miles southwest of Sharps Island Light and $5\frac{3}{4}$ miles northwest of James Island, defined by latitude $38^{\circ} 34' 29.6''$ and longitude $75^{\circ} 26' 17.0''$; thence along the boundary line between Talbot County and Dorchester County, passing south of Sharps Island into the Chesapeake Bay entrance of the lower Choptank River, as laid down on "Charts Nos. 33, 36, and 37, Natural Oyster Bars, Maryland," to a point defined by the intersection of this boundary line with a straight line across the entrance of lower Choptank River, defined at its northwestern end by a point situated on Blackwalnut Point in latitude $38^{\circ} 40' 06.6''$ and longitude $76^{\circ} 20' 24.7''$ and defined at its southeastern end by a point situated on Cook Point in latitude $38^{\circ} 37' 55.7''$ and longitude $76^{\circ} 17' 28.7''$.¹

¹ Latitudes and longitudes based on the United States standard datum of the United States Coast and Geodetic Survey.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION.

The oyster laws of Maryland authorizing the survey to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of location and character of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking a landmark has only an indefinite idea of its location. They gradually proceed from description of the general locality of a landmark to the descriptions of its immediate surroundings. This is followed by specific details of the character of the center and reference marks and a "round" of reference angles and distances which in themselves frequently contain enough information to furnish an independent and reliable location of the triangulation station.

METHOD OF DESCRIBING TRIANGULATION STATIONS.

The separate descriptions of triangulation stations should not be used without reading the following explanation of the method of describing the triangulation stations, as it contains certain details that are common to all the landmarks described in this publication and which are omitted in the separate descriptions as being needless repetitions:

Name.—The title at the top of each separate description is the name by which the landmark or triangulation station is known and designated in all work and published oyster records or oyster charts of both the Government and State. The selection of the name is usually left to the triangulator establishing the station, and it may or may not have geographic or other significance in reference to the locality.

General locality.—Under this heading is given the general locality of the landmark in reference to well-known and prominent natural or artificial features, such as the nearest body of water, town, river, steamer wharf, well-defined point of land, church, or any other feature that is likely to remain both permanent and prominent.

This heading also covers a reference to the published chart or map which shows the location of the station most clearly. Nearly all the triangulation stations described in this publication are plainly indicated by name and a triangulation symbol on the published charts of oyster bars of Maryland. In this case they are referred to by serial number only, the words "charts of oyster bars of Maryland" being omitted to avoid needless repetition. These published oyster charts are on the large scale of 1 part in 20,000 (approximately $3\frac{1}{8}$ inches to a statute mile) and show the locations of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Immediate locality.—Under this heading is given the description of the "observed station" in reference to its immediate surroundings. This is supposed to include a statement of the station's estimated elevation above high water or some other well-defined level of the locality, such as a road or house; the character of the ground on which it is located, such as marsh land, sand beach, cultivated field, or meadow; estimated bearings in points of the compass and estimated distances in yards *from* (not *to*) easily recognized features, such as extreme end of point, edge of bluff, bank of creek, line of telephone poles, shore line, barn, house, fence, ditch, trees, or any other definite detail, such as being on range with the tangent of an island and a church, etc.

When a standard monument has been established near the station as a "reference station," this heading also covers a statement of the true bearing of the monument in degrees and minutes and its measured distance in meters, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached and might be mistaken for the center mark of the "observed station" unless special attention is called to it.

The distinction between the "observed station" and "reference station" should be carefully noted by anyone making use of the description of stations for any future surveying operations.

The "observed station" is located at the particular triangulation point covered by the description of stations, and is the one whose geographic position is first computed, as it is the point which was "occupied" and "observed on" for horizontal angles. However, in spite of the primary importance of the location of the "observed station," it will be noted from the description of stations that frequently it is not marked as well as the "reference station," and in some instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate "observed stations" on edges of banks and ends of points of land, which in the tide-water section of Maryland generally means they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the great need of "reference stations," if the frequent reestablishment of a new framework of triangulation is to be avoided.

The chief reason and need for the establishment of the "reference station," or secondary station, as it might be well named, is explained in the preceding paragraph,

but in several instances other reasons, such as the location of the "observed station" on an unstable sand dune, in a cultivated field, in front of a residence, or other places objectionable to the landowner, have led to establishment of "reference stations." The location of the "reference station" in relation to the "observed station" is fixed for plotting on charts or for computation of its geographic position by checked measurements of its distances and azimuth from the "observed station."¹

Marks.—Under this heading is given a description of the character of the permanent monuments or other marks of the location of the "observed station," and of the "reference station" where one has been established.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom, the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground, unless otherwise stated.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

References.—Under this heading are given the "rounds" of directions and distances to all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described, this, if possible, being a lighthouse, church spire, or other permanent and prominent point. Its direction is taken as being $0^{\circ} 00' 00''$ and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing² of the initial object is always given in parentheses alongside its name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by horizontal angles or for the relocation of corner buoys of oyster-bar boundaries by the method of compass directions described in this publication under the heading of "Boundaries of oyster bars."

¹ Geographic coordinates (latitude, longitude, distance, and azimuth) relating to any of the "observed stations" or of the "reference stations" described in this publication can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

² The mean magnetic variation for Talbot County was $6^{\circ} 10'$ west of north in 1911 and increasing at the rate of $5'$ yearly.

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles, and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner, the accuracy of the directions are indicated by the refinement of angular measure with which they are recorded.

THOMAS POINT SHOAL LIGHT.

General locality.—Western side of Chesapeake Bay offshore about $1\frac{1}{4}$ miles southeast of Thomas Point and 3 miles south of entrance to channel to Annapolis. (See Chart No. 31.)

Immediate locality.—Observed station is on a hexagonal screw-pile structure known as Thomas Point Shoal Lighthouse.

Marks.—Observed station is center point of lantern on Thomas Point Shoal Lighthouse.

References.—

"Thomas 3" (N $56^{\circ} 07'$ W)..... 0 00 00 $1\frac{1}{4}$ miles.

BLOODY POINT BAR LIGHT.

General locality.—Offshore of southwestern end of Kent Island on northern side of entrance to Eastern Bay about $1\frac{1}{2}$ miles southwest of Bloody Point and $1\frac{1}{4}$ miles west of Kent Point. (See Chart No. 31.)

Immediate locality.—Observed station is on tower on caisson structure known as Bloody Point Bar Lighthouse.

Marks.—Observed station is center point of lantern on Bloody Point Bar Lighthouse.

References.—

"Valiant" (S $4^{\circ} 59'$ E)..... 0 00 00 $4\frac{1}{2}$ miles.

TENK.

General locality.—Northern side of entrance to Eastern Bay on Kent Point about $1\frac{1}{2}$ miles east of Bloody Point Bar Light. (See Chart No. 31.)

Immediate locality.—Observed station is in about 2 feet of water 18 yards offshore of Kent Point, 50 yards southwest of point of land, and 65 yards south-southeast of another point of land. Cement monument marking reference station is 35.94 meters N $36^{\circ} 15'$ W of observed station.

Marks.—Observed station is nail in center of 3-inch square stub in water with top about on level with high water. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

"Bloody Point Bar Light" (S $86^{\circ} 34'$ W).....	0	00	00	.....	$1\frac{1}{4}$ miles.
REFERENCE STATION.....	57	11	30	.....	35.94 meters.
Chimney of house on Tilghmans Point Farm..	169	26	..	.....	$5\frac{1}{8}$ miles.
"Rich Neck Water Tank".....	175	48	10	.....	$5\frac{1}{4}$ miles.
Flagpole on Claiborne train shed.....	181	14	..	.....	$4\frac{1}{2}$ miles.
Right chimney of house.....	188	34	..	.....	$4\frac{1}{2}$ miles.
"Kemp Tower".....	190	21	30	.....	$3\frac{3}{8}$ miles.
Right chimney of brick house.....	206	17	..	.....	$3\frac{3}{4}$ miles.
Right chimney of house.....	240	12	..	.....	$4\frac{1}{2}$ miles.
Chimney left of house among trees on Poplar					
Island.....	278	26	..	.....	$3\frac{3}{4}$ miles.

STRAIGHT.

General locality.—Northern shore of Eastern Bay on Long Point about $2\frac{1}{4}$ miles northeast of Kent Point, $2\frac{1}{8}$ miles northwest of Wades Point and $\frac{1}{8}$ mile northeast of entrance to Long Point Creek. (See Chart No. 31.)

Immediate locality.—Observed station is in a cultivated field about 8 feet above high water, 35 yards west of edge of bank, 45 yards northwest of edge of bank near a tree, 80 yards south-southwest of fence corner, 245 yards south-southeast of fence corner at gate, and 175 yards east-southeast of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Needle" (N 48° 15' E).....	0	00	00	 $4\frac{1}{8}$ miles.
Left tangent of Tilghmans Point.....	35	07	..	 $4\frac{3}{8}$ miles.
Chimney of house on Tilghmans Point Farm..	42	27	..	 $4\frac{1}{8}$ miles.
"Kemp Tower".....	83	46	00	 $2\frac{1}{8}$ miles.
Nail in blaze in red oak tree (22 inches diameter)	113	59	00	 31.06 meters.
Right tangent of woods on Poplar Island....	155	30	..	 $5\frac{3}{4}$ miles.
Left tangent of woods on Kent Point.....	179	48	..	.....
South peak of building.....	264	18	..	 $\frac{1}{2}$ mile.
East peak of barn.....	317	48	..	 $\frac{3}{4}$ mile.
South chimney of house.....	330	10	..	 $\frac{1}{4}$ mile.

MOUTH.

General locality.—Northern shore of Eastern Bay on eastern shore of Kent Island about $1\frac{1}{4}$ miles north of Long Point, $3\frac{1}{8}$ miles northwest of Claiborne Wharf, and $3\frac{1}{4}$ miles southwest of Bodkin Island. (See Chart No. 31.)

Immediate locality.—Observed station is in a cultivated field about 8 feet above high water, 10 yards west of top of a bank with uniform slope to shore, 50 yards south of a small cove, and 20 yards south of a group of cedar trees near shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Matta" (N 5° 49' W).....	0	00	00	 $2\frac{1}{4}$ miles.
South gable of barn.....	26	41	..	 $4\frac{1}{4}$ miles.
West gable of house.....	33	35	..	 $2\frac{1}{4}$ miles.
Right tangent of woods on Turkey Point....	50	25	..	 3 miles.
"Parsons Island Water Tank".....	66	43	..	 $5\frac{1}{8}$ miles.
North gable of barn.....	74	49	..	 $6\frac{1}{4}$ miles.
Left tangent of woods on Tilghmans Point...	103	05	..	 $4\frac{1}{4}$ miles.
South chimney of house on Tilghmans Point Farm.....	112	19	..	 4 miles.
"Rich Neck Water Tank".....	124	48	40	 $3\frac{1}{8}$ miles.
South gable of Claiborne Wharf house.....	137	41	..	 $3\frac{1}{2}$ miles.
"Kemp Tower".....	154	09	..	 $3\frac{1}{2}$ miles.
East chimney of Legg house.....	224	59	..	 $\frac{3}{8}$ mile.
Chimney of small house.....	286	35	..	 $1\frac{1}{2}$ miles.
South gable of barn.....	342	46	..	 $1\frac{3}{8}$ miles.

MATTA.

General locality.—Northern shore of Eastern Bay on eastern shore of Kent Island at western side of entrance to Shipping Creek about 2 miles west of Turkey Point. (See Chart No. 31.)

Immediate locality.—Observed station is in cultivated field about 15 feet above high water, 125 yards southwest of extreme end of point, 25 yards northwest of dry ditch, and 200 yards northwest of lone cedar tree near shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Batts" (N 67° 45' E).....	0	00	00	1 mile.
North chimney of house.....	17	54	..	2 miles.
Left tangent of woods on Tilghmans Point..	54	30	..	5½ miles.
North chimney of house on Tilghmans Point				
Farm.....	62	34	..	5¾ miles.
"Rich Neck Water Tank".....	71	31	..	5¼ miles.
Left tangent of woods on Long Point.....	105	49	..	2½ miles.
Chimney of Greeve house.....	124	53	..	¼ mile.
South chimney of house.....	231	14	..	¾ mile.
South cupola on barn.....	247	39	..	⅞ mile.
East chimney of house.....	273	58	..	1½ miles.
Chimney of small house.....	296	12	..	1¼ miles.
West chimney of house.....	305	45	..	1¼ miles.

BATTS.

General locality.—Northern shore of Eastern Bay on southern end of Batts Neck between Shipping and Cox Creeks about 1¼ miles northwest of Turkey Point. (See Chart No. 31.)

Immediate locality.—Observed station is in cultivated field about 2 feet above high water, 21 yards north of shore, and 100 yards west of a wire fence extending 100 yards into bay.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument. Station "COXES CREEK," 1899, is 87.70 meters N 72° 20' E of observed station and is marked by the center of a cross in the top of a granite post about 12 inches square in the rough and about 27 inches long projecting 5 inches above surface of ground. The top of the granite post is dressed to a 6-inch cube marked with a square cross and the letters U. S. Subsurface mark is center of neck of a bottle buried with top 3 inches below base of granite post.

References.—

	°	'	''	
"Turkey" (S 58° 24' E).....	0	00	00	1¼ miles.
North chimney of house on Tilghmans Point				
Farm.....	19	25	..	5 miles.
"Rich Neck Water Tank".....	28	26	..	5¼ miles.
Nail in blaze in one of twin persimmon trees				
(4 inches diameter).....	37	36	40	3.94 meters.
Left tangent of woods on Long Point.....	69	48	..	3¼ miles.
East gable of house.....	76	30	..	2½ miles.
Nail in blaze in persimmon tree (6 inches				
diameter).....	91	13	50	9.76 meters.
South chimney of house.....	202	08	..	¾ mile.
South chimney of house.....	242	32	..	¾ mile.
South gable of barn.....	271	54	..	1½ miles.
North chimney of house.....	293	22	..	1¾ miles.
"Coxes Creek, 1899" (granite post).....	310	44	20	87.70 meters.
North chimney of house.....	341	07	..	1½ miles.

TURKEY.

General locality.—Northern shore of Eastern Bay on southern end of Cox Neck on Turkey Point about 1 mile west of the north end of Bodkin Island. (See Chart No. 31.)

Immediate locality.—Observed station is in marsh meadow about 2 feet above high water, 40 yards northeast of shore, 200 yards south of a group of three pine trees near shore, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Mouth" (S 40° 32' W).....	0	00	00	 2¾ miles.
Chimney of house.....	23	19	..	 2¾ miles.
Chimney of Greeve house.....	49	14	..	 2½ miles.
South cupola on barn.....	68	20	..	 2¾ miles.
North chimney of house.....	72	30	..	 2½ miles.
South chimney of house.....	103	39	..	 1¾ miles.
South chimney of house.....	113	22	..	 2½ miles.
West pine tree of group.....	132	12	..	 200 yards.
Right tangent of Bodkin Island.....	254	46	..	 1 mile.
Left tangent of Tilghmans Point.....	275	23	..	 3½ miles.
North chimney of house on Tilghmans Point				
Farm.....	286	38	..	 3¾ miles.
"Rich Neck Water Tank".....	297	25	..	 4¾ miles.
Left tangent of woods on Long Point.....	352	26	..	 3 miles.

NEEDLE.

General locality.—Northern part of Eastern Bay on Bodkin Island at entrance to Crab Alley Bay about 1½ miles west of the south end of Parsons Island and 1 mile east-southeast of Turkey Point. (See Chart No. 31.)

Immediate locality.—Observed station is near south end of Bodkin Island, about 12 feet above high water, 50 yards north by west of shore, 90 yards northeast by east of shore, 115 yards west-southwest of shore, and in center of radial lines of sight cut in bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	''	
"Straight" (S 48° 17' W).....	0	00	00	 4¾ miles.
Nail in blaze in pine tree (6 inches diameter).....	5	51	30	 22.78 meters.
Nail in blaze in pine tree (8 inches diameter).....	27	56	10	 17.17 meters.
Right chimney of large house.....	64	29	..	 3½ miles.
Nail in blaze in pine tree (6 inches diameter).....	82	06	50	 11.54 meters.
Chimney of house on Parsons Island.....	194	43	..	 2½ miles.
Near chimney of Starr, large, brick house....	262	54	..	 6½ miles.
Cupola on left barn of Tilghmans Point Farm.....	289	40	..	 3 miles.
Chimney of bungalow.....	324	57	..	 5½ miles.
Nail in blaze in pine tree (7 inches diameter).....	345	25	00	 18.20 meters.

COX.

General locality.—Western shore of Crab Alley Bay on Cox Neck about ¾ mile north of Eastern Bay and 1 mile northwest of Bodkin Island. (See Chart No. 31.)

Immediate locality.—Observed station is at edge of a cultivated field on narrow neck of land about 3 feet above high water, 16 yards west of shore, 18 yards east of shore, and 80 yards northwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tull" (N 12° 34' E).....	0	00	00	1½ miles.
Chimney of small house.....	12	54	..	2½ miles.
Chimney of house.....	21	19	..	2½ miles.
Cupola on barn.....	30	09	..	2¾ miles.
Right corner of old barn.....	49	27	..	2½ miles.
East chimney of large brick house.....	54	32	..	2½ miles.
Right tangent of Normans Point.....	61	40	..	2 miles.
North gable of barn on Parsons Island.....	79	50	..	2½ miles.
Left tangent of Bodkin Island.....	123	47	..	¾ mile.
East gable of barn.....	227	02	..	¾ mile.
Chimney of house.....	232	44	..	3 miles.
Chimney of house.....	255	50	..	2½ miles.

RICH NECK WATER TANK.

General locality.—On neck of land about halfway between Eastern Bay and Miles River about 1¼ miles south-southwest of Tilghmans Point. (See Charts Nos. 31 and 32.)

Immediate locality.—Observed station is on large water tank on steel tower on Rich Neck Farm.

Marks.—Observed station is spindle on center of water tank.

References.—

None necessary.

KEMP TOWER.

General locality.—Southern shore of Eastern Bay on Wades Point about 1 mile southwest of Claiborne Wharf and 5½ miles east of Bloody Point Bar Light. (See Chart No. 31.)

Immediate locality.—Observed station is on tower or cupola of Wades Point Hotel, which is a large, square, frame structure adjoining a brick house.

Marks.—Observed station is center of top of roof of cupola.

References.—

None necessary.

KEMP.

General locality.—Southern shore of Eastern Bay on Wades Point about 1¾ miles southwest of Claiborne Wharf and 4½ miles east by south of Bloody Point Bar Light. (See Chart No. 31.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 30 yards east by north of a wire fence and several trees, 55 yards south-southeast of edge of bank, 90 yards east-northeast of a bungalow, 130 yards north by west of a wire and wood fence corner, 130 yards north-northwest of wooden fence, and 400 yards west by south of Wades Point Hotel.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bloody Point Bar Light" (N 83° 37' W)....	0	00	00	4¾ miles.
Nail in blaze in locust tree (14 inches diameter).....	1	41	30	35.07 meters.
Left tangent of Kent Point.....	3	11	..	3¾ miles.
Chimney on middle of house.....	17	12	..	3¾ miles.
Left peak of barn.....	25	21	..	4¾ miles.
Chimney of house.....	31	04	..	3½ miles.
Left chimney of house.....	45	27	..	3 miles.
Peak of main part of house.....	63	15	..	5½ miles.

References—Continued.

	°	'	"	
Left tangent of Tilghmans Point.....	128	06	..	3½ miles.
"Dixon" (center of house).....	130	07	50	2¾ miles.
"Kemp Tower".....	139	06	40	¼ mile.
Fence corner (wood and wire).....	244	43	..	132 yards.
Near corner of cook house.....	288	40	..	110 yards.
Nail in blaze in locust tree (7 inches diam- eter).....	300	20	20	27.23 meters.
Right corner post of piazza.....	306	24	..	90 yards.
Nail in blaze in cedar tree (6 inches diameter). ..	210	43	30	26.97 meters.

END.

General locality.—Western shore of Harris Creek on southwestern side of entrance to Northwest Branch. (See Charts Nos. 31, 32, and 34.)

Immediate locality.—Observed station is in a cultivated field about 5 feet above high water, and 4 yards west of shore. Cement monument marking reference station is 14.76 meters S 83° 58' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 5 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 3 inches above surface of ground.

References.—

	°	'	"	
"Rod" (S 79° 51' E).....	0	00	00	¾ mile.
West gable of barn.....	11	40	..	¾ mile.
North chimney of Miller house.....	45	37	..	1¼ miles.
REFERENCE STATION.....	163	48	20	14.76 meters.
South gable of barn.....	208	51	..	200 yards.
South chimney of Kirby house.....	218	48	..	200 yards.
South chimney of house.....	259	20	..	¼ mile.
West gable of tin-roofed barn.....	262	00	..	¾ mile.
South chimney of Harrison house.....	345	20	..	¾ mile.

LAWN.

General locality.—Western shore of upper Harris Creek about ½ mile south of junction of Northeast Branch and Northwest Branch. (See Charts Nos. 31, 32, and 34.)

Immediate locality.—Observed station is in northeast corner of a lawn about 5 feet above high water, 10 feet southwest of top of vertical bank washed by high water, and 16 yards northwest of bathhouse and wharf.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"End" (N 17° 03' W).....	0	00	00	¾ mile.
Nail in locust stump.....	24	10	..	0.84 meter.
Cupola on barn.....	39	41	..	2½ miles.
South chimney of Harrison house.....	54	34	..	¾ mile.
North chimney of house.....	95	46	..	¾ mile.
North chimney of house.....	139	33	..	1¼ miles.
North chimney of Miller house.....	143	27	..	¾ mile.
Nail in blaze in walnut tree (18 inches diameter).....	199	25	40	2.55 meters.
Nail in blaze in cherry tree (24 inches diameter).....	264	30	30	5.96 meters.

Survey of Oyster Bars, Talbot County, Md.

PARSONS.

General locality.—In northern side of Eastern Bay on western side of Parsons Island about 3 miles north of Tilghmans Point. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land on highest part of island about 15 feet above high water, 110 yards southeast of shore, 270 yards south-southwest of Parsons Island water tank, 350 yards southwest of a house, 380 yards west-southwest of a large barn, 145 yards northeast of a wire fence, 155 yards northwest of wire fence at farm road, 195 yards southeast of a fence, and on the range of the west edge of the south chimney on the lower gable of the house with the west side of a window in the center of the south side of the house. Cement monument marking reference station is 26.10 meters N $21^{\circ} 43'$ E of observed station.

Marks.—Observed station is center of cross cut on rough granite stone about 35 inches long and 12 inches square with top cut to 6-inch cube and marked "U. S." in lower half of cross. Subsurface mark is the mouth of a bottle 3 inches below base of monument. Reference station is center point of triangle on standard cement monument with top 5 inches above the surface of the ground.

References.—

"Alley" (N $2^{\circ} 12'$ W).....	0	00	00	.....	1¼ miles.
REFERENCE STATION.....	23	55	30	.....	26.10 meters.
"Parsons Island Water Tank".....	24	04	20	.....	268 yards.
Near peak of house.....	35	13	..	.....	400 yards.
Right corner of barn.....	61	27	..	.....	382 yards.
Walnut tree.....	148	17	..	.....	300 yards.
Cupola of left barn of Tilghmans Point farm.....	192	07	..	.....	3½ miles.
Right tangent of Claiborne train shed.....	202	57	..	.....	5 miles.
Right end of woods on Poplar Island.....	220	27	..	.....	12 miles.
Left tangent of Kent Point.....	234	23	..	.....	8¼ miles.
Left chimney of house.....	297	57	..	.....	3 miles.
Side peak of 2¼-story house.....	314	35	..	.....	3½ miles.
Middle chimney of large brick house.....	336	44	..	.....	1¼ miles.
"New Barn Cupola".....	349	10	..	.....	2¼ miles.

PARSONS ISLAND WATER TANK.

General locality.—Northern part of Eastern Bay between Crab Alley and Prospect bays on Parsons Island about half way between the north and south end of the island. (See Chart No. 32.)

Immediate locality.—Observed station is on a water tank on wooden structure near a house.

Marks.—Observed station is center of spindle on center of water tank.

References.—

None necessary.

NORMAN.

General locality.—Eastern shore of Crab Alley Bay on southwestern extremity of Crab Alley Neck about ¼ mile west of Normans Point, 2 miles northeast of Turkey Point, and ⅜ mile northwest of Parsons Island. (See chart No. 32.)

Immediate locality.—Observed station is in a cultivated field on a rapidly washing, narrow neck of land, about 6 feet above high water, 20 yards north of vertical bank at shore, 30 yards south of vertical bank at shore, and 40 yards northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Parsons" (S 38° 40' E).....	0	00	00	1½ miles.
Right tangent of Parsons Island.....	16	46	..	1¼ miles.
Left tangent of woods on Tilghmans Point...	30	30	..	4 miles.
Left tangent of woods on Bodkin Island.....	68	28	..	2 miles.
Right tangent of Bodkin Island.....	78	39	..	2 miles.
Right tangent of woods on Turkey Point....	93	17	..	2 miles.
Nail in blaze in hackberry tree (6 inches diameter).....	112	42	30	22.49 meters.
Chimney of small house.....	154	22	..	1¾ miles.
East chimney of house.....	167	41	..	2¼ miles.
South gable of house.....	205	38	..	1 mile.
West chimney of large brick house.....	271	53	..	¼ mile.
Chimney of small house.....	292	22	..	3 miles.
"Parsons Island Water Tank".....	353	41	40	1 mile.

ALLEY.

General locality.—Western shore of Prospect Bay on Crab Alley Neck, about ¾ mile north of Parsons Island, and ¾ mile north of Narrows Point. (See Chart No. 32.)

Immediate locality.—Observed station is on hard ground in a marsh at northeast end of clump of 12 persimmon trees about 1 foot above high water and 75 yards southwest of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Dull" (N 2° 35' W).....	0	00	00	¾ mile.
Near peak of "Fishermans Inn".....	6	48	..	3 miles.
Nail in blaze in persimmon tree (4 inches diameter).....	30	41	20	3.99 meters.
Left chimney of old house with two dormer windows.....	48	29	..	2¾ miles.
Left peak of barn.....	79	42	..	2¾ miles.
Left chimney of large house.....	113	34	..	2¾ miles.
"Parsons Island Water Tank".....	177	35	30	1½ miles.
Nail in blaze in persimmon tree (3 inches diameter).....	194	56	00	4.88 meters.
Nail in blaze in persimmon tree (2½ inches diameter).....	238	25	00	3.70 meters.
East chimney of brick house.....	246	02	..	½ mile.
Nail in blaze in persimmon tree (3 inches diameter).....	298	21	30	3.29 meters.
Chimney of house among trees.....	317	54	..	1½ miles.
"New Barn Cupola".....	335	41	40	1 mile.

BONNET.

General locality.—Eastern shore of Prospect Bay on Hood Point about 1½ miles southeast of Hog Island and ½ mile west of Piney Point. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh ground about 1 foot above high water, 21 yards west of shore, 12 yards west of inlet, and 55 yards northeast of the extreme end of Hoods Point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"New Barn Cupola" (S 79° 29' W).....	0	00	00	1½ miles.
Chimney of house.....	24	11		1¼ miles.
East gable of barn.....	28	24		1¼ miles.
North chimney of house.....	64	04		2 miles.
South gable of barn.....	90	43		2½ miles.
Chimney on small house.....	137	57		½ mile.
West gable of house.....	199	06		1½ miles.
Chimney of small house.....	239	13		2½ miles.
Chimney of small house.....	258	39		4¾ miles.
South chimney of house on Kent Island.....	323	24		1¾ miles.
Cupola on barn.....	353	09		1¾ miles.

BRIAN REFERENCE STATION.

General locality.—Eastern shore of Prospect Bay on Brian Point, about 1 mile southeast of Piney Point, 2 miles northeast of Parsons Island, and ¾ mile west of entrance to Hog Hole Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 13 yards east of edge of marsh, 14 yards northwest of edge of marsh, 18 yards north of extreme end of point, and 40 yards southwest of a cultivated field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Green" (S 8° 55' E).....	0	00	00	2¾ miles.
Left tangent of woods on Bennett Point....	4	55		4 miles.
Right tangent of woods on Parsons Island....	65	33		2¼ miles.
Middle chimney of large brick house.....	84	37		2¼ miles.
Cupola of barn.....	102	34		2¾ miles.
"New Barn Cupola".....	109	56	20	2½ miles.
Left peak of large house.....	112	08		2½ miles.
Near peak of house.....	282	47		½ mile.
Chimney of house.....	344	42		1¼ miles.

GREEN.

General locality.—Eastern shore of Prospect Bay on point at northern side of entrance to Greenwood Creek, about ¾ miles northeast of Tilghmans Point, and 2¾ miles north of Bennett Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a sanded marsh point about 2 feet above high water, 5 yards northwest of shore, 26 yards northeast of shore, 53 yards east by north of a point of shore, 37 yards southeast by east of a point of shore, and 105 yards south-southwest of a point of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Benn" (S 0° 45' W).....	0	00	00	2¾ miles.
Cupola of barn.....	19	16	10	6 miles.
Right tangent of woods on Tilghmans Point....	52	01		3½ miles.
"Parsons Island Water Tank".....	115	03	50	2½ miles.
East chimney of brick house.....	124	42		3½ miles.
Peak of small house.....	155	05		4 miles.
Chimney outside of house.....	165	43		4 miles.
Near peak of barn.....	178	20		3 miles.
Peak of house.....	235	45		1 mile.
Chimney of house behind barn.....	316	01		¾ mile.
Square chimney of house.....	345	41		1½ miles.

BENN.

General locality.—Eastern shore of Miles River on Bennett Point at western side of entrance to Wye River. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 75 yards northeast of extreme end of point, 100 yards southwest from edge of wood, and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite.

Marks.—Observed station is center point of triangle on standard cement monument projecting 1 foot above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Hough" (N 57° 41' E).....	0	00	00	¾ mile.
Cupola of barn.....	70	45	..	1 mile.
"Rich Neck Water Tank".....	203	33	..	3½ miles.
South chimney of house on Tilghmans Point Farm.....	215	59	..	3 miles.
"Parsons Island Water Tank".....	271	55	..	4½ miles.
Right tangent of house.....	288	21	..	6¾ miles.

HOUGH.

General locality.—Northwestern side of entrance to Wye River on a point about ¾ mile northeast of Miles River and ½ mile southwest of north end of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is on a grass point about 1 foot above high water, 16 yards north of shore, 22 yards south of shore, 15 yards west of extreme end of point, 11 yards east of small pool in marsh, and 200 yards east of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Won" (N 9° 29' E).....	0	00	00	¾ mile.
Near peak of building.....	7	22	..	2¾ miles.
Right side of chimney of house.....	17	20	..	2¾ miles.
Near peak of long barn.....	28	43	..	1¼ miles.
Piazza post of house in woods.....	62	14	..	½ mile.
Windmill.....	128	24	..	¾ mile.
Windmill.....	181	48	..	4¼ miles.
Tall, slender tree in woods.....	271	57	..	200 yards.
Black walnut tree.....	339	23	..	200 yards.

WON.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west about ½ mile northwest of northern end of Bruffs Island, and ¾ mile northeast of southern end of Bennett Point. (See Chart No. 32.)

Immediate locality.—Observed station is on small marsh point, about 1 foot above high water, 4 yards northwest of shore, 4 yards west of shore, 4 yards north of shore, and 40 yards southeast of large, lone, black walnut tree. Cement monument marking reference station is 22.80 meters S 15° 31' W of observed station.

Marks.—Observed station is nail in center of 2-inch stub projecting 5 inches above 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Nose" (N 28° 05' E).....	0	00	00	 ½ mile.
Near peak of large barn.....	23	20	..	 ⅞ mile.
Side peak of roof of house.....	25	18	..	 ⅞ mile.
Near peak of house.....	47	26	..	 1⅞ miles.
Left large chimney of house in woods.....	81	08	..	 ½ mile.
Right corner of building on Bruffs Island....	98	41	..	 ½ mile.
Windmill.....	126	52	40	 1¼ miles.
Near peak of fisherman shanty.....	161	03	..	 100 yards.
REFERENCE STATION.....	167	25	50	 22.80 meters.
Nail in blaze in cedar tree (2 inches diameter).	210	23	00	 12.54 meters.
Nail in blaze in walnut tree (3 inches diameter).....	262	30	10	 10.81 meters.
Nail in blaze in walnut tree (30 inches diameter).....	290	06	10	 38.12 meters.
Right corner of right chimney of house.....	337	19	..	 ½ mile.

NOSE.

General locality.—Western shore of the branch of Wye River bounding Wye Island on the west on a point about ¾ mile north-northwest of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 4 yards southwest of shore, 6 yards north of shore, 14 yards west-northwest of extreme end of point, and 34 yards east of a row of locust trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Stop" (N 12° 09' E).....	0	00	00	 ¾ mile.
Church cross.....	1	55	..	 2 miles.
Chimney of cottage.....	3	03	..	 1⅓ miles.
Near peak of house.....	37	22	..	 ¾ mile.
Left peak of house.....	67	25	..	 ½ mile.
Right corner of house on Bruffs Island.....	152	55	..	 ¾ mile.
"St. Michaels P. E. Church Spire".....	183	28	10	 5½ miles.
"St. Michaels Water Tank".....	184	51	20	 5½ miles.
Nail in blaze in locust tree (8 inches diameter).....	237	58	50	 34.45 meters.
Nail in blaze in locust tree (9 inches diameter).....	256	32	10	 28.31 meters.
Near peak of large house between two chimneys.....	266	09	..	 ¼ mile.
Nail in blaze in locust tree (7 inches diameter).....	280	50	50	 31.44 meters.
Tangent of point.....	316	16	..	 100 yards.

SNOUT.

General locality.—On Wye Island on the eastern shore of the branch of Wye River, bounding Wye Island on the west about ¾ mile north of Bruffs Island and ½ mile north of Bordley Point. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 12 feet above high water, 30 yards east by south of edge of bank, 65 yards south of large cherry tree in side of bank at fence, 65 yards southwest of rail fence, 70 yards northeast of a small clump of trees at edge of bank, and 400 yards west by north of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"South" (S 20° 34' E).....	0	00	00	1/4 mile.
Left peak of boat house.....	19	10	..	7/8 mile.
"St. Michaels P. E. Church Spire".....	38	07	30	6 1/4 miles.
"St. Michaels Water Tank".....	39	30	10	6 1/2 miles.
Nail in blaze in locust tree (10 inches diameter).....	49	21	30	64.78 meters.
Peak of house between two chimneys.....	99	02	..	1/2 mile.
Near peak of small house.....	111	45	..	1/2 mile.
Nail in blaze in tree (8 inches diameter)....	179	42	10	34.39 meters.
Near peak of barn.....	186	34	..	1 1/4 miles.
Left corner of house.....	203	36	..	1 3/8 miles.
Nail in blaze in fence post.....	246	50	10	63.29 meters.
Near peak of house.....	249	00	..	3/4 mile.
Left peak of house.....	296	41	50	1/4 mile.

SOUTH.

General locality.—On southwestern end of Wye Island on Bordley Point on the northern shore of the junction of the two branches of Wye River bounding Wye Island about 3/8 mile north-northeast of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is in a pasture on a rounded point about 10 feet above high water, 11 yards northeast of edge of field, 13 yards north of edge of field, 22 yards northwest of edge of field, 30 yards southeast of cut in cliff, and 50 yards southwest of point of water bushes at gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Flat" (N 55° 27' E).....	0	00	00	1/2 mile.
Right chimney of house.....	19	30	..	1 1/4 miles.
Windmill.....	64	34	30	1 1/4 miles.
Spindle on barn cupola.....	134	55	20	1 1/4 miles.
Left chimney of house in woods.....	153	45	..	1/2 mile.
Left peak of building.....	173	45	..	4 1/2 miles.
Peak between two chimneys of house.....	244	27	..	3/4 mile.
Left chimney of house.....	317	37	..	3/8 mile.
Near peak of house.....	343	21	..	2 miles.

FLAT.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on a point between two coves about 1 mile northeast of Bruffs Island and 1/2 mile northeast of Bordley Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 8 yards north of shore, 8 yards southwest of shore, 12 yards west of extreme end of point, 17 yards east of south end of line of several trees on edge of bank 3 feet high, and 45 yards east of a black gum tree 5 feet in diameter at ground.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

Survey of Oyster Bars, Talbot County, Md.

References.—

	°	'	"	
"Albert" (N 84° 31' E).....	0	00	00	 ½ mile.
Left corner of tower of house.....	30	33	..	 1¼ miles.
Windmill.....	62	55	40	 1½ miles.
Spindle on barn cupola.....	119	34	..	 1½ miles.
Front peak of boat house.....	134	02	..	 1 mile.
Left tangent of black gum tree.....	158	06	40	 44 yards.
Near peak of house.....	249	34	..	 ¾ mile.
Spindle on cupola.....	351	11	10	 ¾ mile.
Windmill.....	352	15	30	 ¾ mile.
Near peak of Baldwin house.....	354	50	..	 ¾ mile.

ALBERT.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south on a point about 1¼ miles east-northeast of north end of Bruffs Island, and opposite entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 17 yards northwest of shore, 28 yards east of shore, 35 yards south of shore, and 75 yards north-northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Le Seur" (N 1° 03' E).....	0	00	00	 300 yards.
Baldwin windmill.....	65	11	40	 ¾ mile.
Flagstaff on Baldwin boat house.....	67	59	..	 400 yards.
Windmill on wooden tower.....	125	16	30	 1 mile.
Peak of house with several chimneys.....	127	08	..	 1 mile.
Chimney outside near end of old house.....	170	05	..	 1 mile.
Front peak of boat house.....	231	10	..	 1¼ miles.
Peak between two chimneys of house.....	269	40	..	 1¾ miles.
Left peak of house.....	274	45	..	 ¾ mile.
Peak of house.....	347	47	..	 ¾ mile.

LE SEUR.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south about ½ mile north of a prominent point opposite entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a clump of small trees about 3 feet above high water, 11 yards east of shore, 12 yards southwest of shore on line to next point, and 12 yards north by east of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Attila" (N 31° 07' E).....	0	00	00	 ¼ mile.
Near peak of large barn.....	56	55	..	 ¾ mile.
Spindle on cupola.....	61	52	50	 ¾ mile.
Right corner of chimney of Baldwin house ..	72	24	..	 ¾ mile.
Nail in blaze in walnut tree (4 inches diameter).....	140	45	50	 4.11 meters.
Nail in blaze in walnut tree (5 inches diameter).....	201	19	40	 7.60 meters.
Nail in blaze in walnut tree (3 inches diameter).....	255	56	30	 6.74 meters.
Nail in blaze in walnut tree (3 inches diameter).....	304	08	10	 7.27 meters.

ATTILA.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south about $\frac{3}{4}$ mile north of entrance to Lloyd Creek at north side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on slope of a point about 3 feet above high water, 10 yards west of shore, 10 yards north-northeast of shore, and 11 yards northwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tobiae" (N 15° 18' E).....	0	00	00	 $\frac{1}{4}$ mile.
Near peak of very large barn.....	97	30	..	 $\frac{3}{8}$ mile.
Near peak of house.....	104	53	..	 $\frac{3}{8}$ mile.
Spindle on cupola.....	128	31	50	 $\frac{1}{4}$ mile.
Left corner of Baldwin house.....	132	48	..	 $\frac{1}{4}$ mile.
Flagpole on wharf house.....	146	43	..	 $\frac{1}{4}$ mile.
Windmill.....	163	31	..	 $1\frac{1}{4}$ miles.
Nail in blaze in cedar stump (10 inches diam- eter).....	197	07	20	 8.36 meters.
Nail in blaze in cedar tree (8 inches diameter).....	347	34	10	 38.64 meters.

TOBINE.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south about $\frac{3}{4}$ mile north of entrance to Lloyd Creek on point at north side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on point of a cultivated field about 6 feet above high water, 4 yards north of edge of field, 4 yards southwest of edge of field, 5 yards west-northwest of point of field, and $\frac{1}{4}$ mile east-southeast of a barn with cupola.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sang" (N 6° 21' W).....	0	00	00	 $\frac{1}{4}$ mile.
Right corner of house.....	16	19	..	 $\frac{3}{8}$ mile.
Near peak of large barn.....	143	19	..	 $\frac{1}{2}$ mile.
Cupola of Baldwin barn.....	173	35	10	 $\frac{1}{2}$ mile.
Right peak of Baldwin house.....	175	17	..	 $\frac{1}{2}$ mile.
Windmill.....	187	35	..	 $1\frac{1}{2}$ miles.
Near peak of house.....	249	12	..	 $1\frac{1}{8}$ miles.
Cupola of building.....	304	50	..	 $\frac{1}{4}$ mile.

SANG.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south about $1\frac{1}{4}$ miles north of entrance to Lloyd Creek and $\frac{3}{4}$ mile west of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on bank about 12 feet above high water between two cuts in bank, 2 yards west of edge of bank, 3 yards northwest of edge of bank, 4 yards southwest of edge of bank, 32 yards from bottom of northern cut in bank, 52 yards from bottom of southern cut in bank, and 95 yards south-southwest of tree-lined gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Turn" (N 48° 08' E).....	0	00	00	¼ mile.
Tangent of woods.....	41	45	..	2 miles.
Tangent of point.....	56	52	..	¾ mile.
Right peak of large barn.....	100	25	..	¾ mile.
Baldwin windmill.....	121	06	..	¾ mile.
Peak of near gable of Baldwin house.....	122	05	..	¾ mile.
Near peak of ell of house.....	199	14	..	¾ mile.
Left corner of house.....	256	56	..	¾ mile.
Left peak of house.....	281	53	..	¾ mile.

TURN.

General locality.—On Wye Island on the northwestern shore of the branch of Wye River bounding Wye Island on the south about ½ mile west of entrance to Dividing Creek on point at western side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on bank in a cultivated field about 8 feet above high water, 5 yards northwest of edge of bank, 6 yards north of edge of bank, 7 yards west of edge of bank, 50 yards south-southwest of entrance to a small creek, and 55 yards east of a dead sycamore tree in field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Go" (S 84° 55' E).....	0	00	00	⅓ mile.
Near peak of small house.....	32	18	..	1⅓ miles.
Right peak of large barn.....	67	07	..	¾ mile.
Baldwin windmill.....	85	55	..	¾ mile.
Near peak of gable of Baldwin house.....	86	21	..	¾ mile.
Nail in blaze in wild cherry tree (3 inches diameter).....	128	20	10	23.08 meters.
Chimney outside, near end of house.....	179	44	..	¾ mile.
Nail in blaze in locust tree (4 inches diameter).....	255	50	00	18.85 meters.
Nail in blaze in chestnut stump with second growth (14 inches diameter).....	279	53	10	12.93 meters.

GO.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on a point between two coves about ¼ mile west of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on grassy beach at high water, about 2 yards south of foot of bank 4 feet high covered with dense growth of young trees, and 37 yards from entrance to a small creek. Cement monument marking reference station is 19.06 meters N 22° 35' E of observed station.

Marks.—Observed station is nail in center of 2-inch pine stub projecting 2 inches above 2-inch tile pipe with top 2 inches below surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Divide" (N 89° 24' E).....	0	00	00	¾ mile.
Near peak of shanty.....	48	16	..	¾ mile.
Chimney of house.....	51	46	..	¾ mile.
Peak of gable on Baldwin house.....	104	12	..	¾ mile.
Baldwin windmill.....	104	13	30	¾ mile.

References—Continued.

	°	'	"	
Near corner of square chimney of house.....	159	10	..	¾ mile.
Cupola on barn.....	164	20	..	¾ mile.
Nail in blaze in gum tree (4 inches diameter). 249	05	50	.....	6.68 meters.
Nail in blaze in gum tree (2 inches diameter). 272	16	30	.....	5.73 meters.
REFERENCE STATION.....	293	11	20	 19.06 meters.
Nail in blaze in gum tree (4 inches diameter). 313	07	10	.....	4.15 meters.

DIVIDE.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on point at eastern side of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in point of woods about 4 feet above high water, 2 yards west-northwest of edge of bank, 8 yards east-northeast of edge of bank, and 11 yards north-northeast of point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Princess" (N 53° 04' E).....	0	00	00	 ½ mile.
Right tangent of old wharf.....	12	44	..	¾ mile.
Near peak of large barn.....	50	24	..	1¾ miles.
Chimney of house.....	141	53	..	78 mile.
Baldwin windmill.....	162	18	30	 1 mile.
Right chimney of house.....	189	13	20	 2 miles.
Peak of house between two chimneys.....	195	40	..	2½ miles.
Nail in blaze in oak tree (14 inches diameter). 232	30	30	.....	4.05 meters.
Nail in blaze in gnarled oak tree (8 inches diameter).....	280	24	50	 9.98 meters.
Nail in blaze in oak tree (30 inches diameter). 316	39	20	.....	8.41 meters.

PRINCESS.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south about ¾ mile northeast of entrance to Dividing Creek and ¾ mile west of entrance to Granary Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in marsh land about 1 foot above high water, 4 yards north of shore, 18 yards east by north of a large oak tree at shore, 4 yards south of foot of bank 10 feet high covered with vegetation, and 10 yards west by south of a white oak tree on bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Philip" (S 83° 05' E).....	0	00	00	 ¾ mile.
Chimney of house on Pickerings Creek.....	15	16	..	1¾ miles.
Right peak of large barn.....	110	22	..	1 mile.
Baldwin windmill.....	121	01	.....	1¾ miles.
Cupola of Baldwin stable.....	121	40	..	1¼ miles.
Nail in blaze in white oak tree (3 inches diameter).....	163	26	00	 5.65 meters.
Nail in blaze in cedar tree (14 inches diameter).....	255	36	20	 3.01 meters.
Right tangent of old wharf.....	351	19	..	150 yards.

PHILIP.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on western side of entrance to Granary Creek and $\frac{1}{2}$ mile east of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is about 1 foot above high water, 3 yards north of shore, 9 yards south-southwest of shore of creek, 9 yards west of extreme end of point, and 6 yards southeast of point of bank 4 feet high. Cement monument marking reference station is 4.62 meters N $18^{\circ} 12'$ E of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub projecting 2 inches above 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	''	
"Granary" (S $63^{\circ} 59'$ E).....	0	00	00	 $\frac{1}{4}$ mile.
Baldwin windmill.....	113	44	20	 $1\frac{3}{8}$ miles.
Near peak of ell of house.....	141	49	..	 $1\frac{1}{4}$ miles.
Nail in blaze in cedar tree (3 inches diameter). 169	10	50	.....	9.33 meters.
Nail in blaze in pine tree (6 inches diameter). 210	13	30	.....	18.09 meters.
Nail in blaze in oak tree (7 inches diameter).. 238	45	30	.....	4.41 meters.
REFERENCE STATION.....	262	11	40	 4.62 meters.
Tangent of point.....	321	20	..	 $\frac{1}{4}$ mile.
Near peak of large building.....	358	32	..	 2 miles.

GRANARY.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on point at eastern side of entrance to Granary Creek. (See Chart No. 32.)

Immediate locality.—Observed station is among water bushes on marsh land, about 1 foot above high water, 10 yards northeast of shore, 11 yards west of shore, 12 yards north by west of extreme end of point, and 50 yards from trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Morn" (N $89^{\circ} 30'$ E).....	0	00	00	 $\frac{1}{8}$ mile.
Large chimney of building.....	24	48	..	 $1\frac{1}{4}$ miles.
Right tangent of point.....	85	34	..	 $\frac{1}{4}$ mile.
Left end of barn.....	176	08	..	 $1\frac{1}{2}$ miles.
Left tangent of old wharf.....	199	54	..	 $\frac{1}{2}$ mile.

MORN.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south, about 300 yards east of entrance to Granary Creek and $\frac{3}{4}$ mile northwest of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is about 1 foot above high water, 4 yards northwest of shore, 4 yards northeast of shore, and 6 yards southeast of foot of wooded slope to field 12 feet above high water. Cement monument marking reference station is 3.82 meters N $33^{\circ} 52'$ W of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub projecting 2 inches above 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2-inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	''	
"Bush" (N 83° 20' E).....	0	00	00	 ¼ mile.
Tangent of point.....	4	01	..	 ¼ mile.
Near peak of building.....	32	42	..	 1½ miles.
Tangent of foot of slope.....	56	33	..	 ¼ mile.
Right tree on point.....	120	06	..	 ¼ mile
Tangent of woods.....	182	21	..	 ⅝ mile.
Nail in blaze in locust tree (6 inches diameter)	202	15	50	 2.49 meters.
Nail in blaze in cedar tree (4 inches diameter).	241	37	00	 5.47 meters.
REFERENCE STATION.....	242	48	00	 3.82 meters.
Nail in blaze in locust tree (7 inches diameter)	244	46	50	 6.68 meters.

BUSH.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on north side of entrance to a small cove, about ¼ mile east of entrance to Granary Creek and ⅝ mile northwest of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land, about 7 feet above high water, 4 yards northeast of edge of bank, 9 yards northwest of point of curve of land, 22 yards west of tangent of land at tree, 30 yards west-northwest of scattering trees, and 50 yards northwest of a point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Nub" (S 83° 55' E).....	0	00	00	 ⅝ mile.
Tangent of point.....	46	27	..	 ¼ mile..
Largest cedar tree on point of high bank.....	96	41	..	 ¼ mile.
Nail in blaze in locust tree (2 inches diameter)	102	18	10	 3.81 meters.
Tangent of point.....	166	18	..	 ¼ mile.
Nail in blaze in hackberry tree (5 inches diameter).....	180	06	00	 8.65 meters.
Nail in blaze in walnut tree (10 inches diameter).....	348	25	20	 20.04 meters.

NUB.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on eastern side of entrance to a creek about ⅝ mile east of entrance to Granary Creek and ½ mile north of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 2 yards east of shore, 20 yards southwest of shore, 45 yards west of shore, 20 yards south of extreme end of point, and 16 yards north-northwest of woods. Cement monument marking reference station is 15.10 meters N 83° 01' E of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub set in 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	''	
"Wheel" (S 4° 10' E).....	0	00	00	 ¼ mile.
Chimney on house.....	30	02	..	 ⅝ mile.
Largest cedar on point of high bank.....	47	16	..	 ⅝ mile.
Large oak tree.....	94	55	..	 ⅝ mile.
Large oak tree.....	143	43	..	 ⅝ mile.
Large oak tree.....	226	17	..	 150 yards.
REFERENCE STATION.....	267	11	20	 15.10 meters.
Nail in blaze in cedar tree (8 inches diameter).	296	57	30	 16.81 meters.
Nail in blaze in oak tree (5 inches diameter)..	333	04	40	 19.64 meters.
Nail in blaze in oak tree (4 inches diameter)..	349	37	20	 20.87 meters.

WHEEL.

General locality.—On Wye Island on the northern shore of the branch of Wye River bounding Wye Island on the south on a point about $\frac{3}{8}$ mile southeast by east of entrance to Granary Creek and $\frac{1}{2}$ mile northwest of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh point south of woods, about 1 foot above high water, 2 yards east of shore, 4 yards southeast of point at slight cut in marsh, and 40 yards north of square point of shore. Cement monument marking reference station is 5.26 meters S $86^{\circ} 47'$ E of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub set in 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Pick" (S $12^{\circ} 31'$ E).....	0	00	00	$\frac{3}{8}$ mile.
Left peak of building.....	0	04	..	$\frac{7}{8}$ mile.
Right tangent of woods.....	111	05	..	1 mile.
Large oak tree.....	129	21	..	$\frac{1}{2}$ mile.
Nail in blaze in oak tree (14 inches diameter).....	219	10	40	21.66 meters.
Nail in blaze in oak tree (9 inches diameter).....	230	46	50	18.74 meters.
Nail in blaze in cedar tree (6 inches diameter).....	262	26	00	19.26 meters.
REFERENCE STATION.....	285	44	00	5.26 meters.
Left peak of large building.....	299	31	..	$\frac{3}{4}$ mile.
Chimney showing over fence.....	308	54	..	$\frac{3}{4}$ mile.
Right peak of large barn.....	359	34	..	$\frac{7}{8}$ mile.

PICK.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on western side of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 15 feet above high water, 25 yards southwest of edge of field at line of cedar trees, 22 yards west of gully, 40 yards south-southeast of a small clump of trees beyond small gully, and 300 yards east-southeast of fringe of cedar trees along edge of field northeast to east of gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Corner" (N $77^{\circ} 40'$ W).....	0	00	00	$\frac{1}{4}$ mile.
Nail in blaze in cherry tree (6 inches diameter).....	42	54	00	36.64 meters.
Left peak of barn.....	58	21	..	$1\frac{1}{4}$ miles.
Front peak of house.....	104	57	..	$1\frac{1}{8}$ miles.
Nail in blaze in cedar tree (6 inches diameter).....	110	11	50	27.24 meters.
Nail in blaze in cedar tree (6 inches diameter).....	134	46	00	26.37 meters.
Near peak of house.....	152	11	..	$\frac{3}{8}$ mile.
Nail in blaze in hackberry tree (5 inches diameter).....	169	37	50	23.00 meters.
Left peak of large barn.....	243	36	..	$\frac{1}{4}$ mile.
Right peak of house.....	314	37	..	$\frac{1}{4}$ mile.

CORNER (Wye River).

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south about $\frac{1}{4}$ mile west of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 15 feet above high water, 50 yards southwest of edge of bank, 55 yards south of gully, 70 yards north-northwest of trees in depression, and 120 yards west of point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Right" (N 20° 45' W).....	0	00	00	 $\frac{1}{4}$ mile.
Nail in blaze in large elm tree.....	16	18	00	 50.41 meters.
Near peak of building.....	18	21	..	 1 mile.
Nail in blaze in one of twin elm trees.....	63	58	40	 47.11 meters.
Near peak of house.....	101	49	..	 $1\frac{1}{4}$ miles.
Left peak of house with two chimneys.....	113	02	..	 $1\frac{1}{4}$ miles.
Nail in blaze in oak tree (14 inches diameter). 162	16	00	.....	61.44 meters.
Near peak of large barn.....	238	11	..	 $\frac{3}{4}$ mile.
Right corner of large house.....	275	51	..	 $1\frac{1}{2}$ miles.
Chimney on middle of large house.....	280	01	..	 1 mile.

RIGHT.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on a point about $\frac{1}{2}$ mile southeast of entrance to Granary Creek and $\frac{1}{2}$ mile northwest of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in tree-fringed cultivated land about 15 feet above high water, 7 yards south of edge of bank, 9 yards from point of bank at path, 15 yards northwest of edge of bank, and 120 yards east of fence in depression.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Chew" (N 71° 45' W).....	0	00	00	 $\frac{1}{8}$ mile.
Left chimney of long house in woods.....	33	06	..	 1 mile.
Nail in blaze in cedar tree (8 inches diameter) 76	18	00	.....	8.25 meters.
Left one of two large chimneys showing over the trees.....	131	03	..	 1 mile.
Left corner of building.....	168	32	..	 $1\frac{1}{2}$ miles.
Nail in blaze in hickory tree (10 inches diameter).....	182	29	40	 10.80 meters.
Nail in blaze in elm tree (10 inches diameter).....	243	35	00	 29.80 meters.
Right peak of house.....	269	37	..	 $\frac{1}{2}$ mile.
Windmill to right of two large cupolas.....	287	12	..	 $\frac{5}{8}$ mile.

CHEW.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south about $\frac{3}{8}$ mile southeast of entrance to Granary Creek and $\frac{5}{8}$ mile west-northwest of entrance to Pickerings Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 6 yards north-east of foot of bank 12 feet high, 12 yards west of point of shore, and 10 yards northwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Whale" (N 77° 32' W).....	0	00	00	 ½ mile.
Large oak tree.....	72	58	..	 ¼ mile.
Tangent of point.....	131	18	..	 ¾ mile.
Left end of building.....	138	38	..	 ½ mile.
Near peak of building.....	175	22	..	 1¼ miles.
Near peak of large barn.....	179	07	..	 1 mile.
Nail in blaze in cedar tree (10 inches diameter).....	284	33	..	 18.19 meters.
Nail in blaze in cedar tree (6 inches diameter).....	348	47	10	 9.57 meters.
Nail in blaze in cedar tree (5 inches diameter).....	358	58	20	 21.82 meters.

WHALE.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on a point at western side of entrance to a small cove about ¼ mile south of entrance to Granary Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a sand-and-grass point about 2 feet above high water, 2 yards south-southeast of shore, 4 yards west-northwest of shore, 9 yards southwest of extreme end of point, and 7 yards east by north of foot of a terraced bank about 15 feet high.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Matter" (N. 77° 03' W).....	0	00	00	 ½ mile.
Near peak of large barn.....	52	33	..	 ¾ mile.
Large oak tree.....	115	39	..	 ¼ mile.
Near corner of building.....	175	40	..	 1¼ miles.
Near peak of large barn.....	178	45	..	 1½ miles.
Nail in blaze in cedar tree (10 inches diameter).....	286	06	30	 9.40 meters.
Nail in blaze in cedar tree (7 inches diameter).....	309	33	10	 5.50 meters.
Nail in blaze in cedar tree (5 inches diameter).....	315	23	40	 9.49 meters.

MATTER.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south about ¾ mile east-southeast of entrance to Dividing Creek and ¾ mile west-southwest of entrance to Granary Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on small grassy point about 1 foot above high water, 3 yards south of shore, and 2 yards north of foot of tree-fringed bank 5 feet high. Cement monument marking reference station is 8.58 meters S 0° 32' E of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub set in 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	''	
"Deck" (N 78° 05' W).....	0	00	00	 200 yards.
Left tangent of wharf.....	62	43	..	 ¼ mile.
Near peak of large barn on Pickerings Creek.....	180	05	..	 1¾ miles.
Nail in blaze in cedar tree (14 inches diameter).....	204	10	50	 2.31 meters.
REFERENCE STATION.....	257	32	20	 8.58 meters.
Nail in blaze in one of twin cedar trees (8 inches diameter).....	276	33	10	 3.72 meters.
Nail in blaze in cedar tree (8 inches diameter).....	305	43	30	 2.42 meters.

DECK.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on a point about $\frac{1}{2}$ mile southeast of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is at edge of water bushes on a grass point about 1 foot above high water, 4 yards south of shore, 10 yards west of a round point, 20 yards east of shore, and 30 yards north of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Quarter" (S 38° 13' W).....	0	00	00	$\frac{1}{4}$ mile.
Chimney of house.....	43	11	..	$1\frac{1}{4}$ miles.
Tangent of point of land.....	74	32	..	$\frac{1}{4}$ mile.
Left tangent of old wharf.....	149	46	..	400 yards.
South peak of large barn.....	170	41	..	$\frac{3}{4}$ mile.
Tangent of point of land.....	206	49	..	500 yards.
Left cedar tree on point.....	243	41	..	200 yards.

QUARTER.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south about $\frac{3}{8}$ mile south-southeast of entrance to Dividing Creek and at east side of entrance to a cove. (See Chart No. 32.)

Immediate locality.—Observed station is on bank in a cultivated field about 12 feet above high water, 2 yards southeast of edge of bank, 100 yards south of trees and break in bluff, and 120 yards north of edge of bank at point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Nodim" (N 87° 45' W).....	0	00	00	$\frac{1}{8}$ mile.
Near peak of barn.....	1	18	..	$1\frac{1}{8}$ miles.
Chimney outside near end of house.....	10	34	..	$1\frac{7}{8}$ miles.
Near corner of barn.....	53	27	..	$\frac{7}{8}$ mile.
Right tangent of old wharf.....	112	25	..	$\frac{3}{8}$ mile.
Right peak of large barn.....	304	41	..	$\frac{3}{4}$ mile.
Baldwin windmill.....	317	20	..	$\frac{1}{8}$ mile.
Near peak of house.....	354	43	..	$1\frac{1}{4}$ miles.

NODIM.

General locality.—Southeastern shore of the branch of Wye River bounding Wye Island on the south about $\frac{3}{8}$ mile southwest of entrance to Dividing Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 4 feet above high water, 4 yards south of shore, 8 yards southeast of shore, 25 yards southwest of shore of marsh, and 13 yards south of corner of marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Gusta" (S 21° 08' W).....	0	00	00	$\frac{3}{8}$ mile.
Near peak of house.....	42	04	..	$1\frac{3}{8}$ miles.
Left peak of house.....	63	19	..	1 mile.
Chimney outside left end of house.....	134	07	..	$\frac{5}{8}$ mile.
Right corner of house.....	152	55	..	$\frac{3}{4}$ mile.
Right tangent of wharf.....	220	29	..	$\frac{3}{4}$ mile.
Baldwin windmill.....	354	18	..	$\frac{5}{8}$ mile.

GUSTA.

General locality.—Southeastern shore of the branch of Wye River bounding Wye Island on the south about $\frac{3}{8}$ mile north-northeast of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 8 yards east of edge of bank, 12 yards southeast of edge of bank, 17 yards northeast of edge of bank, 35 yards north-northeast of a depression, and 65 yards southwest of end of cut in bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sylvia" (S 22° 57' W).....	0	00	00	 $\frac{3}{8}$ mile.
Left tangent of house on Bruffs Island.....	26	06	..	 2 miles.
Left chimney of house.....	45	15	..	 $1\frac{3}{4}$ miles.
Peak between two chimneys of house.....	51	42	..	 2 miles.
Right peak of house.....	80	53	..	 1 mile.
Cupola of barn.....	88	46	..	 $\frac{5}{8}$ mile.
Left corner of house.....	155	40	..	 $\frac{3}{4}$ mile.
Right peak of large barn.....	312	09	..	 $\frac{3}{8}$ mile.
Baldwin windmill.....	350	13	..	 $\frac{3}{8}$ mile.

SYLVIA.

General locality.—Southeastern shore of the branch of Wye River bounding Wye Island on the south on second prominent point north of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 11 yards east by south of edge of bluff, 22 yards northeast of lone locust tree 2 feet in diameter at the edge of the bank, and 400 yards northwest of a large barn.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Baldwins" (S 27° 13' W).....	0	00	00	 $\frac{1}{4}$ mile.
Nail in blaze in locust tree (24 inches diameter).....	24	12	20	 19.90 meters.
Very large lone tree.....	40	21	..	 22 yards.
Nail in blaze in locust tree (6 inches diameter).....	53	42	20	 13.37 meters.
Left peak of barn.....	73	23	..	 $\frac{5}{8}$ mile.
Cupola of building.....	106	19	..	 $\frac{5}{8}$ mile.
Near peak of large house.....	156	37	..	 1 mile.
Near peak of large barn.....	273	21	..	 $\frac{3}{8}$ mile.
Baldwin windmill.....	334	37	..	 $\frac{1}{4}$ mile.
Peak of near gable of Baldwin house.....	336	06	..	 $\frac{1}{4}$ mile.
Spindle on cupola.....	336	51	..	 $\frac{1}{4}$ mile.

BALDWINS.

General locality.—Southeastern shore of the branch of Wye River, bounding Wye Island on the south on a point about $\frac{3}{8}$ mile north of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on a short, sharp point of marsh about 100 yards north of a yacht landing, 7 yards northeast of shore, 10 yards southeast of shore, 12 yards east of extreme end of point, and 8 yards west of foot of bank 8 feet high.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cousin" (S 25° 13' E).....	0	00	00	¼ mile.
Flagstaff on yacht-landing house.....	11	27	..	100 yards.
Windmill.....	27	44	..	1 ½ miles.
Left peak of bell cupola.....	27	55	..	1 ¾ miles.
Spindle on barn cupola.....	62	53	..	2 miles.
Front peak of boathouse on Bruffs Island.....	77	51	..	1 ½ miles.
Near corner of left chimney of house.....	111	37	..	¾ mile.
Near peak of barn with cupola.....	175	20	..	¾ mile.
Near peak of barn.....	215	40	..	1 mile.
Nail in blaze in cedar tree (6 inches diameter).....	248	50	50	7.91 meters.
Nail in blaze in locust tree (5 inches diameter).....	311	47	20	5.36 meters.
Nail in blaze in locust tree (4 inches diameter).....	324	04	50	13.45 meters.

COUSIN.

General locality.—Southeastern shore of the branch of Wye River bounding Wye Island on the south, about 1 ½ miles east-northeast of north end of Bruffs Island and at northern side of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a pasture about 9 feet above high water, 25 yards east of edge of bank, 65 yards south-southeast of a small clump of trees in bottom land, 65 yards north of trees, 60 yards north of edge of a field, and 200 yards south of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Lloyd" (S 36° 07' W).....	0	00	00	½ mile.
Spindle on barn cupola.....	8	04	50	2 miles.
Front peak of boathouse.....	26	05	..	1 ½ miles.
Left peak of house.....	63	13	..	1 ½ miles.
Chimney of house.....	91	31	..	¾ mile.
Peak of near gable of Baldwin house.....	135	42	..	200 yards.
Windmill on large barn.....	187	08	..	¾ mile.
Right peak of house.....	209	44	..	350 yards.
Left peak of bell cupola.....	333	34	..	1 mile.
Windmill.....	334	19	..	1 mile.

LLOYD.

General locality.—Southern shore of the branch of East Wye River bounding Wye Island on the south, at western side of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 12 feet above high water, 70 yards southwest of edge of bank, 65 yards south of edge of bank, 65 yards north-northeast of point of woods and bottom land, and 120 yards northwest of an oak tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Edwards" (N 84° 02' W).....	0	00	00	¾ mile.
Near peak of house.....	32	43	..	1 mile.
Left peak of barn.....	52	18	..	1 ½ miles.
Near peak of house.....	76	14	..	¾ mile.
Peak of near gable of Baldwin house.....	109	28	..	¾ mile.
Near peak of barn.....	122	59	..	¾ mile.
Right peak of large house.....	132	01	..	1 mile.
Large oak tree.....	208	57	30	120 yards.

EDWARD.

General locality.—Southern shore of the branch of Wye River bounding Wye Island on the south on a point at eastern side of entrance to Shaw Bay, about $\frac{3}{4}$ mile east-northeast of north end of Bruffs Island and $\frac{3}{4}$ mile west of entrance to Lloyd Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 8 yards southeast of edge of a bluff which is washing away, and 30 yards southwest of a line of large trees at edge of bank and field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Colonel" (S 0° 10' W).....	0	00	00	$\frac{1}{2}$ mile.
Windmill.....	33	28	20	$1\frac{1}{4}$ miles.
Front peak of boathouse.....	64	02	..	$\frac{3}{4}$ mile.
Peak between two chimneys of house.....	114	10	..	$1\frac{3}{8}$ miles.
Near peak of house.....	146	12	..	$\frac{7}{8}$ mile.
Chimney of house.....	170	06	..	$1\frac{1}{4}$ miles.
Nail in blaze in walnut tree (13 inches diameter).....	201	56	40	26.40 meters.
Nail in blaze in locust tree (4 inches diameter).....	216	09	10	26.95 meters.
Nail in blaze in locust tree (10 inches diameter).....	235	55	40	31.55 meters.
Windmill.....	309	41	00	$\frac{7}{8}$ mile.

COLONEL.

General locality.—Southern shore of Shaw Bay on a point at entrance to a small cove about $\frac{1}{2}$ mile from the branch of Wye River bounding Wye Island on the south and $\frac{5}{8}$ mile east of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is in a field about 10 feet above high water, 6 yards southeast of edge of bank which is washing away, 9 yards south-southwest of point of bank, and 3 yards west of top of bank lined with cedar, walnut, and oak trees. Cement monument marking reference station is 18.69 meters S 24° 06' E of observed station.

Marks.—Observed station is nail in center of 2-inch stub projecting 4 inches above 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Shaw" (N 68° 12' W).....	0	00	00	$\frac{3}{4}$ mile.
Peak of roof between two chimneys of house.....	19	29	..	$1\frac{5}{8}$ miles.
Near peak of house.....	48	21	..	$1\frac{1}{8}$ miles.
Peak of near gable of house.....	100	57	..	$1\frac{1}{4}$ miles.
Nail in blaze in oak tree (20 inches diameter).....	110	47	00	5.21 meters.
Nail in blaze in oak tree (6 inches diameter).....	183	33	40	6.46 meters.
Nail in blaze in oak tree (7 inches diameter).....	213	01	40	13.45 meters.
REFERENCE STATION.....	224	05	50	18.69 meters.
Near corner of house on Bruffs Island.....	355	07	..	$\frac{3}{4}$ mile.

SHAW.

General locality.—Southern shore of entrance to the branch of Wye River bounding Wye Island on the south on northern end of Bruffs Island about $\frac{3}{8}$ mile southwest of Bordley Point. (See Chart No. 32.)

Immediate locality.—Observed station is in walnut, pine, and cedar woods, about 15 feet above high water, 7 yards southwest of edge of bank, and 100 yards north-northwest of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Won" (N 69° 43' W).....	0	00	00	 ½ mile.
Peak of house between two chimneys.....	39	56	..	 ⅞ mile.
Chimney on right end of house.....	77	44	..	 1¾ miles.
Near peak of large barn.....	88	54	..	 1½ miles.
Near peak of house.....	137	02	..	 1¾ miles.
Chimney of house.....	174	08	..	 1¾ miles.
Right corner of left piazza post.....	234	04	10	 100 yards.
Nail in blaze in walnut tree (28 inches diameter).....	235	00	00	 29.32 meters.
Nail in blaze in walnut tree (24 inches diameter).....	268	35	20	 24.30 meters.
Nail in blaze in walnut tree (15 inches diameter).....	291	48	10	 15.98 meters.

BRUFFS.

General locality.—Eastern shore of Wye River on northwest point of Bruffs Island about ⅞ mile northeast of Bennett Point and ½ mile southwest of Bordley Point. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 10 yards east of shore, 14 yards southwest of shore, 20 yards southeast of point of marsh, and 18 yards west of point of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Law" (S 2° 07' W).....	0	00	00	 ½ mile.
"St. Michaels P. E. Church Spire".....	17	35	20	 5¾ miles.
"St. Michaels Water Tank".....	17	50	20	 5¼ miles.
Cupola of barn.....	38	15	00	 4½ miles.
Near peak of large barn.....	54	30	..	 3¾ miles.
Large walnut tree.....	118	55	..	 ½ mile.
Peak between two chimneys of house.....	156	15	..	 ⅞ mile.
Near corner of house.....	184	29	..	 2¾ miles.
Right peak of house.....	208	24	..	 ⅞ mile.
Nail in blaze in tree (4 inches diameter).....	257	20	30	 17.38 meters.
Nail in blaze in walnut tree (3 inches diameter).....	278	43	50	 27.96 meters.
Nail in blaze in cedar tree (4 inches diameter).....	310	49	30	 41.27 meters.
Smokepipe of building in woods.....	314	28	..	 200 yards.

LAW.

General locality.—Southeastern shore of Wye River about ¾ mile east of Bennett Point and ⅞ mile southwest of south end of Bruffs Island. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated land about 15 feet above high water, 8 yards southeast of edge of a bluff, 45 yards southwest of a wire fence, 100 yards northeast of a clump of trees, and 150 yards northwest of a black walnut tree at edge of field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"James" (S 36° 41' W).....	0	00	00	1/4 mile.
"Rich Neck Water Tower".....	47	20	10	4 1/8 miles.
Chimney of house on Tilghmans Point Farm..	57	48	..	3 3/4 miles.
Cupola of right barn.....	58	51	..	3 3/4 miles.
Near peak of large barn.....	128	41	..	1 1/4 miles.
Right corner of building in woods.....	169	31	..	3/8 mile.
Nail in blaze in cedar tree (4 inches diameter).	182	21	50	38.67 meters.
Left peak of house.....	199	10	..	2 miles.
Nail in blaze in black walnut tree (7 inches diameter).....	206	30	30	45.23 meters.
Nail in blaze in cedar tree (4 inches diameter).....	224	40	40	50.00 meters.
Black walnut tree (18 inches diameter).....	284	14	..	150 yards.
Right corner of barn.....	297	53	..	1/4 mile.
Large cedar tree.....	338	23	..	100 yards.

JAMES (MILES RIVER).

General locality.—Eastern shore of Miles River at southern side of entrance to Wye River, about 3/8 mile southwest of Bruffs Island and 5/8 mile southeast of Bennett Point. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 20 feet above high water, 17 yards east of edge of a bluff at shore, and 14 yards south of edge of a bluff 18 feet high, with uniform slope to shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Frank" (S 3° 18' W).....	0	00	00	1/4 mile.
"St. Michaels P. E. Church Spire".....	15	09	..	4 1/4 miles.
"St. Michaels Water Tank".....	17	06	..	4 3/8 miles.
South chimney of house.....	63	16	..	4 miles.
South chimney of house on Tilghmans Point farm.....	97	14	..	3 1/2 miles.
Right tangent of Tilghmans Point.....	109	08	..	3 1/4 miles.
Chimney of small cabin.....	174	03	..	1 3/8 miles.
West gable of barn.....	190	22	..	2 3/4 miles.
Cupola of barn.....	297	26	..	5/8 mile.

FRANK.

General locality.—Eastern shore of Miles River about 1/2 mile south of entrance to Wye River and 1 mile northeast of Herring Island. (See Chart No. 32.)

Immediate locality.—Observed station is in cultivated field about 18 feet above high water, 8 yards east of a bluff washed by high water, and 125 yards south of a ditch. Cement monument marking reference station is 25.51 meters S 87° 47' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Wood" (S 12° 55' E).....	0	00	00	1/4 mile.
"St. Michaels P. E. Church Spire".....	32	13	..	4 1/4 miles.
"St. Michaels Water Tank".....	34	18	..	4 1/8 miles.
East gable of barn.....	59	33	..	3 miles.

References—Continued.

	°	'	"	
"Rich Neck Water Tank".....	105	14	..	3 $\frac{1}{4}$ miles.
South chimney of house on Tilghmans Point farm.....	117	24	..	3 $\frac{1}{2}$ miles.
Right tangent of Tilghmans Point.....	129	22	..	3 $\frac{1}{4}$ miles.
South gable of small house.....	185	22	..	1 $\frac{1}{4}$ miles.
REFERENCE STATION.....	285	08	10	25.51 meters.
Cupola on barn.....	289	06	..	$\frac{3}{8}$ mile.
East chimney of house.....	335	53	..	1 $\frac{1}{2}$ miles.

WOOD.

General locality.—Eastern shore of Miles River about 1 $\frac{1}{4}$ miles southeast of Bennett Point, 1 $\frac{1}{4}$ miles east-northeast of Herring Island and $\frac{5}{8}$ mile north-northwest of entrance to Woodland Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 18 feet above high water, 18 yards east of shore and top of vertical bank 18 feet high, and 3 yards south of a wire fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Pearson" (N 65° 24' W).....	0	00	00	3 $\frac{1}{4}$ miles.
Right tangent of Tilghmans Point.....	5	29	..	3 $\frac{1}{2}$ miles.
Left tangent of marsh on Bennett Point.....	36	49	..	1 $\frac{1}{4}$ miles.
West gable of barn.....	127	56	..	$\frac{1}{2}$ mile.
"St. Michaels P. E. Church Spire".....	266	53	..	4 miles.
"St. Michaels Water Tank".....	269	09	..	3 $\frac{1}{2}$ miles.
North chimney of house.....	321	42	..	3 miles.
South chimney of house on Tilghmans Point farm.....	353	51	..	3 $\frac{3}{8}$ miles.

HERR.

General locality.—In Miles River on Herring Island, about 1 $\frac{1}{4}$ miles southwest of entrance to Wye River. (See Chart No. 32.)

Immediate locality.—Observed station is on sandy ground in the center of Herring Island, about 2 feet above high water, 30 yards northeast of shore, and 30 yards southwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Rich Neck Water Tank" (N 77° 26' W).....	0	00	00	3 miles.
North chimney of house on Tilghmans Point farm.....	16	28	..	2 $\frac{7}{8}$ miles.
Right tangent of Tilghmans Point.....	31	07	..	2 $\frac{3}{8}$ miles.
South gable of barn.....	81	37	..	7 miles.
North chimney of small house.....	108	59	..	2 $\frac{3}{4}$ miles.
Cupola of barn.....	149	17	..	1 $\frac{1}{2}$ miles.
North gable of barn.....	198	40	..	1 $\frac{3}{4}$ miles.
East gable of barn.....	209	40	..	3 miles.
Left chimney of Seth house.....	333	42	..	2 miles.
North chimney of house.....	345	25	..	2 $\frac{3}{8}$ miles.

OLLIE.

General locality.—Eastern shore of Miles River about 1 mile north of entrance to Leeds Creek, and $\frac{3}{4}$ mile northeast of Deep Water Point. (See Chart No. 32.)

Immediate locality.—Observed station is in woods about 8 feet above high water, 6 yards west of edge of bank which is washing rapidly, and 8 yards northeast of large pine tree at edge of bank. Cement monument marking reference station is 14.42 meters N $74^{\circ} 15'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe with top flush with surface of ground. Sub-surface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of the ground.

References.—

	°	'	"	
"Swing" (S $1^{\circ} 20'$ W).....	0	00	00	$\frac{3}{4}$ mile.
Nail in blaze in pine tree (3 feet diameter)...	25	56	00	7.62 meters.
"St. Michaels Water Tank".....	37	58	20	$2\frac{1}{4}$ miles.
Weather vane on house on Deep Water Point farm.....	57	10	..	1 mile.
Near peak of house.....	91	55	..	$1\frac{5}{8}$ miles.
Chimney of house on Tilghmans Point farm..	130	38	..	$4\frac{1}{2}$ miles.
Right tangent on Tilghmans Point.....	140	03	..	$4\frac{1}{2}$ miles.
"Parsons Island Water Tank".....	157	19	40	$7\frac{1}{4}$ miles.
Left tangent of main woods on Bennett Point.	172	00	..	3 miles.
Chimney on right end of house in woods....	180	00	..	4 miles.
Nail in blaze in pine tree (8 inches diameter).	240	27	..	10.56 meters.
REFERENCE STATION	284	24	40	14.42 meters.
Nail in blaze in pine tree (7 inches diameter).	285	22	10	10.55 meters.
Nail in blaze in pine tree (7 inches diameter).	316	39	..	12.52 meters.

SWING.

General locality.—Eastern shore of Miles River about $\frac{1}{4}$ mile northwest of entrance to Leeds Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh land between river and small pond about 4 yards east of shore, 18 yards west of pond, 100 yards south of point of woods, and 100 yards northwest of another point of woods. Cement monument marking reference station is 54.35 meters N $62^{\circ} 04'$ E of observed station.

Marks.—Observed station is center of 2-inch tile pipe with top flush with surface of ground. Sub-surface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Fair" (S $35^{\circ} 08'$ E)	0	00	00	$\frac{1}{4}$ mile.
Between two chimneys of large house.....	14	25	..	$2\frac{1}{2}$ miles.
Right one of two dormer windows on old house	29	54	..	.....
Peak between two chimneys of Mulligan house.....	45	39	..	$1\frac{3}{4}$ miles.
"St. Michaels P. E. Church Spire".....	83	50	20	$1\frac{3}{4}$ miles.
"St. Michaels Water Tank".....	90	00	50	$1\frac{3}{4}$ miles.
Square chimney of large house.....	114	25	..	$1\frac{1}{4}$ miles.
Weather vane on house on Deep Water Point farm	141	42	..	$\frac{3}{4}$ mile.
Chimney on house on Tilghmans Point farm.	173	38	..	5 miles.
Tangent of Tilghmans Point.....	181	51	..	$5\frac{1}{8}$ miles.
REFERENCE STATION.....	277	12	30	54.35 meters.

FAIR.

General locality.—Eastern shore of Miles River on Fairview Point at northwestern side of entrance to Leeds Creek. (See Chart No. 32.)

Immediate locality.—Observed station is about 2 feet above high water, 9 yards northeast of shore, 16 yards northwest of shore, and 13 yards north of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Second" (N 36° 37' E)	0	00	00	1/4 mile.
West peak of Oliver house	8	01	..	1 mile.
Peak of tower on Norris house	19	05	..	3/4 mile.
Corner post of porch of Rieman house	86	51	..	3/4 mile.
Near peak of gable on house at Pebbly Beach	125	46	..	3 1/4 miles.
Large tree near several buildings in yard	152	40	..	1 5/8 miles.
North peak of large house	160	30	..	1 5/8 miles.
West chimney of house	181	37	..	1 3/8 miles.
"St. Michaels Water Tank"	207	14	50	1 3/4 miles.
Weather vane on square tower of house on Deep Water Point farm	258	58	..	1 mile.
Nail in blaze in cedar tree (10 inches diam- eter)	286	52	40	17.37 meters.
Nail in blaze in cedar tree (14 inches diam- eter)	296	47	30	11.15 meters.
Nail in blaze in cedar tree	334	59	10	15.48 meters.

SECOND.

General locality.—Northwestern shore of Leeds Creek about 1/4 mile northeast of Miles River. (See Chart No. 32.)

Immediate locality.—Observed station is on small marsh point just east of cedar woods about 1 foot above high water, 5 yards west of shore, 13 yards north of shore, and 25 yards south of bend in shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe, buried with top 2 inches below base of monument.

References.—

	°	'	"	
"But" (N 15° 49' E)	0	00	00	3/8 mile.
South peak of barn	7	50	..	1 mile.
Near corner of house	24	19	..	1 1/4 miles.
Brick smokestack at Tunis Mills	32	27	..	2 1/2 miles.
Spindle on tower of house	46	46	..	3/4 mile.
Northeast peak of large building	60	02	..	5/8 mile.
Cupola on barn	141	11	..	1/2 mile.
Nail in blaze in cedar tree (7 inches diameter)	222	10	10	9.31 meters.
Nail in blaze in cedar tree (8 inches diameter)	249	34	40	5.78 meters.
Nail in blaze in cedar tree (10 inches diam- eter)	281	50	10	6.57 meters.

BUT.

General locality.—Northwestern shore of Leeds Creek, about 5/8 mile north of Miles River, and at northeastern side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on a small marsh point, about 1 foot above high water, 11 yards south-southwest of shore, 8 yards west of point of shore, 7 yards north of shore, 7 yards east of pasture land, 100 yards southwest of a clump of trees, and 6 yards from a line of cedar trees extending north and south.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Aber" (N 54° 17' E)	0	00	00	 ¼ mile.
Right corner of large brick house	25	51	"	 ¾ mile.
Spindle on tower of house	45	52	"	 ½ mile.
Right peak of house with two chimneys	93	38	"	 ½ mile.
Right corner of Rieman house	119	04	"	 ¾ mile.
Nail in blaze in cedar tree (4 inches diameter)	190	15	50	 9.17 meters.
Nail in blaze in hackberry tree (3 inches diameter)	211	46	00	 8.93 meters.
Nail in blaze in water bush (3 inches diameter)	264	34	30	 5.42 meters.
Chimney of house	305	01	"	 ½ mile.
South peak of large barn	336	35	"	 ¾ mile.

ABER.

General locality.—Northwestern shore of Leeds Creek, about ¾ mile northeast of Miles River, on point at western side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on a point covered with cedar trees, about 2 feet above high water, 8 yards southwest of shore, 9 yards north of shore, and 9 yards northwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

<i>References.</i> —	°	'	"	
"Two" (N 52° 56' E)	0	00	00	 ¼ mile.
Near peak of barn cupola	34	49	"	 ¾ mile.
Right corner of large brick house	39	47	"	 ½ mile.
Spindle on tower of house	81	41	"	 ¾ mile.
Weather vane on water tank	113	43	"	 1¼ miles.
Nail in blaze in cedar tree (8 inches diameter)	219	11	50	 2.27 meters.
Nail in blaze in cedar tree (4 inches diameter)	242	01	40	 7.90 meters.
Nail in blaze in cedar tree (17 inches diameter)	275	09	10	 16.97 meters.
South peak of large barn	308	20	"	 ¼ mile.

TWO.

General locality.—Northwestern shore of Leeds Creek on a point, about 1 mile northeast of Miles River, and at southern side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 5 yards west of shore, 6 yards northeast of shore, 7 yards north of extreme end of point, and 25 yards southeast of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Face" (S 51° 58' E).....	0	00	00	¼ mile.
Right peak of barn cupola.....	30	37	..	½ mile.
Peak of tower on house.....	45	25	..	¾ mile.
Nail in blaze in water bush (2 inches diam- eter).....	149	46	00	6.23 meters.
Nail in blaze in water bush (2 inches diam- eter).....	206	15	00	3.02 meters.
Nail in blaze in water bush (2½ inches diam- eter).....	228	32	50	4.53 meters.
Left peak of large barn.....	277	05	..	¾ mile.
Cupola on large house.....	301	00	..	1¼ miles.
Near peak of building.....	317	34	..	¾ mile.
Left corner of large brick house.....	348	31	..	¾ mile.

FACE.

General locality.—Southeastern shore of Leeds Creek, about 1 mile northeast of Miles River, and near northeastern side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is in a field about 5 feet above high water, 130 yards east of bank, 150 yards south of bank, 300 yards west-northwest of large brick house, and 110 yards north-northwest of two very large cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mais" (S 38° 30' W).....	0	00	00	¼ mile.
Tangent of woods.....	8	57	..	1 mile.
Left corner of house.....	81	46	..	¾ mile.
Right one of three large cedar trees.....	107	49	..	111 yards.
Near peak of house.....	168	33	..	½ mile.
Brick smokestack at Tunis Mills.....	188	18	40	1½ miles.
West peak of large barn.....	233	34	..	400 yards.
Right corner of large brick house.....	250	38	..	300 yards.
Left peak of barn cupola.....	314	32	..	¼ mile.
Spindle on tower of house.....	342	36	..	¾ mile.

MAIS.

General locality.—Southeastern shore of Leeds Creek about ¾ mile northeast of Miles River and near point at southwestern side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is in western corner of an orchard about 3 feet above high water, 10 yards southeast of top of bank, and 140 yards northwest of a large house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Beak" (S 40° 55' W).....	0	00	00	¼ mile.
Nail in blaze in apple tree (6 inches diameter). ..	25	09	40	4.78 meters.
South peak of large barn.....	115	22	..	¾ mile.
Nail in blaze in apple tree (6 inches diameter). ..	155	59	30	8.19 meters.
Nail in blaze in apple tree (5 inches diameter). ..	244	28	30	3.72 meters.
Spindle on tower of house.....	264	56	30	137 yards.
Nail in blaze in poplar tree (8 inches diam- eter).....	302	00	30	14.08 meters.
Weather vane on water tank.....	313	52	30	¾ mile.

BEAK.

General locality.—Southeastern shore of Leeds Creek about $\frac{1}{4}$ mile northeast of Miles River at southwestern side of entrance to a small cove. (See Chart No. 32.)

Immediate locality.—Observed station is near edge of pasture land about 3 feet above high water, 6 yards southwest of edge of bank, 12 yards south of point of bank, 10 yards southeast of edge of bank, 60 yards west of a small cove, and 25 yards northeast of a line of five poplar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Rieman" (S 35° 51' W).....	0	00	00	 $\frac{1}{4}$ mile.
Cupola on St. Michaels primary school.	18	43	..	 $2\frac{1}{4}$ miles.
Nail in blaze in poplar tree (6 inches diameter).....	118	53	20	 7.70 meters.
Weather vane on water tank.....	123	17	..	 1 mile.
South peak of large barn.....	145	12	..	 $\frac{3}{4}$ mile.
Nail in blaze in hackberry tree (5 inches diameter).....	190	23	20	 7.77 meters.
Spindle on tower of house.....	200	49	..	 $\frac{1}{4}$ mile.
Southwest peak of large building.....	227	41	..	 $\frac{5}{8}$ mile.
Nail in blaze in cedar tree (4 inches diameter).	241	19	50	 13.42 meters.
Weather vane on tower.....	302	55	..	 $1\frac{1}{2}$ miles.

RIEMAN.

General locality.—Southeastern shore of Leeds Creek about $\frac{1}{4}$ mile northeast of Miles River. (See Chart No. 32.)

Immediate locality.—Observed station is on small marsh point about 1 foot above high water, 3 yards south of shore, 3 yards northeast of shore, 6 yards east-southeast of extreme end of point, 12 yards west of large cedar tree on point 2 feet higher than station, and 13 yards west-southwest of two large cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Leeds" (S 11° 28' W).....	0	00	00	 $\frac{1}{4}$ mile.
"St. Michaels P. E. Church Spire".....	48	11	30	 2 miles.
"St. Michaels Water Tank".....	53	23	40	 2 miles.
Left piazza post of Fogg cottage.....	57	38	..	 $1\frac{1}{2}$ miles.
Left corner of chimney.....	157	41	..	 $\frac{3}{4}$ mile.
Near corner of house.....	201	57	..	 $1\frac{1}{4}$ miles.
Right corner of house.....	215	58	..	 $\frac{3}{4}$ mile.
Nail in blaze in cedar tree (20 inches diameter).....	246	12	00	 11.31 meters.
Nail in blaze in cedar tree (8 inches diameter).	274	45	10	 16.86 meters.
Left corner of Rieman house.....	340	27	..	 $\frac{1}{4}$ mile.

LEEDS.

General locality.—Eastern shore of Miles River at southern side of entrance to Leeds Creek. (See Chart No. 32.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 11 yards southeast of shore, 23 yards northeast of shore, 27 yards east-northeast of extreme end of point, and 200 yards west-northwest of a large house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Stony" (S 13° 40' W).....	0	00	00	1½ miles.
Near peak of large house.....	13	07	..	1½ miles.
Cupola on schoolhouse.....	49	19	..	1½ miles.
"St. Michaels Water Tank".....	57	40	20	1½ miles.
Weather vane on Dodson house.....	103	40	..	1¼ miles.
Chimney of small house.....	166	12	..	¾ mile.
Near peak of Rieman house.....	287	07	..	¾ mile.
Tangent of point.....	347	12	..	27 yards.

JOHNSON.

General locality.—Northwestern shore of Miles River on a point about ¾ mile west-southwest of Miles River Bridge. (See Charts Nos. 32 and 34.)

Immediate locality.—Observed station is on a lawn about 10 feet above high water, 3 yards north-northwest of top of bank, 60 yards northeast of cedar tree 20 inches in diameter in clump of six cedar trees near boat landing, and 74 meters southeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Lowndes" (N 72° 02' E).....	0	00	00	¼ mile.
Windmill on tower.....	11	40	..	¾ mile.
Left corner of large chimney outside of house..	35	09	..	¾ mile.
Nail in blaze in pine tree (14 inches diameter)..	48	12	30	11.03 meters.
Spindle on left cupola of barn.....	101	51	..	½ mile.
Right corner of Mumford house.....	114	49	..	½ mile.
Nail in blaze in elm tree (6 inches diameter)..	142	55	10	10.58 meters.
Left side of cedar tree (20 inches diameter)...	136	40	..	57 yards.
Near peak of Dorrance house.....	154	16	..	¾ mile.
Southeast peak of Crown house.....	182	45	..	¾ mile.
Left corner of second story of Lowndes house..	226	54	..	74 meters.
Right corner of house.....	263	09	..	
Nail in blaze in elm tree (5 inches diameter)..	298	45	40	16.11 meters.
Windmill on tower.....	340	31	..	1 mile.
Windmill on tower.....	346	53	..	¾ mile.

LOWNDES.

General locality.—Northwestern shore of Miles River about ¾ mile southwest of Miles River Bridge. (See Chart No. 32.)

Immediate locality.—Observed station is on a rounded point of marsh about 1 foot above high water, 7 yards northwest of shore, 8 yards west of shore, 9 yards north of shore, 16 yards east-northeast of shore, and 65 yards east-southeast of small locust trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Draw" (N 35° 59' E).....	0	00	00	¼ mile.
Right corner of Lockwood house.....	27	45	..	¾ mile.
Right corner of drawtender's house.....	51	42	..	¼ mile.
Henderson windmill.....	68	50	..	¼ mile.
Near peak of large house.....	116	51	..	½ mile.
Right corner of large house.....	200	22	..	2 miles.
Nail in blaze in locust tree (6 inches diameter)	294	42	30	19.17 meters.
Windmill at "The Anchorage".....	342	47	..	¾ mile.
Near corner of "The Anchorage".....	348	50	..	¾ mile.
Left corner of second story of Goldsborough house.....	359	59	..	¾ mile.

DRAW.

General locality.—Northwestern shore of Miles River at northwest end of Miles River Bridge and near old Episcopal Church. (See Chart No. 32.)

Immediate locality.—Observed station is on lawn of "The Anchorage" about 4 feet above high water, 9 yards west of plank sea wall, 40 yards southwest of approach to bridge, 60 yards north of corner of plank sea wall, and 85 yards east of a house.

Marks.—Observed station is center point of triangle on standard cement monument with top 5 inches below surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Chap" (N 59° 04' E).....	0	00	00	 ¼ mile.
Spike in sea wall post.....	7	12	10	 7.72 meters.
Near peak of Lockwood boat landing.....	10	15	..	 ¼ mile.
Right corner of second story of Lockwood house.....	15	54	..	 ½ mile.
Spindle on barn cupola.....	54	46	..	 ¾ mile.
Spike in sea wall post.....	78	53	00	 12.03 meters.
Right corner of second story of Henderson house.....	87	00	..	 ¼ mile.
Nail in blaze in maple tree (12 inches diameter).....	131	48	50	 14.15 meters.
Left corner of log cabin.....	193	18	..	 112 yards.
Nail in blaze in maple tree (12 inches diameter).....	195	05	20	 14.61 meters.
Right corner main house at "The Anchorage".....	218	17	..	 84 yards.
Nail in blaze in pear tree (10 inches diameter).....	254	46	30	 7.63 meters.
Right corner of old Episcopal Church.....	302	34	..	 120 yards.
Spike in sea-wall post.....	325	20	10	 15.32 meters.
Windmill on tower.....	331	51	..	 ¼ mile.
Lightning rod on tower of Goldsborough house.....	338	00	..	 ¼ mile.
Corner of stone bridge abutment.....	354	09	..	 43 yards.

CHAP.

General locality.—Northwestern shore of Miles River opposite point between Glebe Creek and Goldsboro Creek, about ¼ mile northeast of Miles River Bridge. (See Chart No. 32.)

Immediate locality.—Observed station is on point about 2 feet above high water, 5 yards west of shore, 7 yards northeast of shore, and 9 yards north-northwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Villa" (S 61° 08' E).....	0	00	00	 ¾ mile.
Right corner of 2½-story house.....	48	27	..	 ¼ mile.
Left peak of boathouse at "The Anchorage".....	112	11	..	 ¼ mile.
Left corner of "The Anchorage".....	123	26	..	 ¼ mile.
Left corner of old Episcopal Church.....	129	12	..	 ¼ mile.
Nail in blaze in locust tree (5 inches diameter).....	165	37	50	 13.65 meters.
Left corner of Goldsborough house.....	203	39	..	 ½ mile.
Nail in blaze in locust tree (8 inches diameter).....	205	20	00	 9.07 meters.
Windmill on tower.....	210	27	..	 ½ mile.
Nail in blaze in locust tree (8 inches diameter).....	234	21	30	 13.39 meters.
Right peak of brick house.....	275	28	..	 ¾ mile.
Near peak of wharf house.....	329	55	..	 ½ mile.

VILLA.

General locality.—Southeastern shore of Miles River at northern side of entrance to Glebe Creek, about $\frac{3}{4}$ mile east of Miles River Bridge. (See Chart No. 32.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 11 yards northwest of shore, 17 yards southeast of shore, 30 yards west by south of extreme end of point of marsh, 75 yards northeast of shore, and southwest of a few small trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Easton" (S 70° 44' W).....	0	00	00	 $\frac{3}{8}$ mile.
Spindle on cupola of barn near "The Anchor- age".....	16	25	..	 $\frac{5}{8}$ mile.
Windmill at "The Anchorage".....	20	25	..	 $\frac{5}{8}$ mile.
Left corner of tower of old Episcopal Church.....	25	13	..	 $\frac{5}{8}$ mile.
Left corner of modern house.....	54	07	..	 $\frac{3}{8}$ mile.
Windmill on tower.....	57	49	..	 $\frac{1}{2}$ mile.
Nail in blaze in locust tree (8 inches diameter).....	67	52	00	 17.83 meters.
Left corner of "The Villa".....	103	42	..	 $\frac{1}{2}$ mile.
Nail in blaze in locust tree (4 inches diameter).....	119	43	00	 19.86 meters.
Nail in blaze in persimmon tree (8 inches diameter).....	169	12	00	 26.23 meters.
Right corner of large house.....	223	26	..	 $\frac{3}{8}$ mile.
Tongue of bell.....	278	19	..	 $\frac{1}{4}$ mile.
Right corner of Henderson house.....	347	37	..	 $\frac{3}{8}$ mile.

EASTON.

General locality.—Southeastern side of Miles River on southeastern approach to Miles River Bridge. (See Chart No. 32.)

Immediate locality.—Observed station is on southwest side of cribwork retaining a shell road, 6 inches from downstream edge of cribwork, 7 yards southwest of upstream edge of cribwork, 25 yards southeast of corner of cribwork abutment, 30 yards northwest of extended line of Henderson sea wall, 9 yards southwest by south of nails in side of telephone pole on upstream side of bridge, and 45 yards northwest by west of first telephone pole southeast of bridge on northeastern side of road.

Marks.—Observed station is spindle, 1 inch diameter, on top of 3-inch square timber.

References.—None necessary.

HENDERSON.

General locality.—Southeastern shore of Miles River on a point about $\frac{1}{4}$ mile southwest of Miles River Bridge. (See Charts Nos. 32 and 34.)

Immediate locality.—Observed station is on a hard marsh point about 1 foot above high water, 6 yards southeast of shore, 8 yards south of shore, 13 yards east of shore, 23 yards north-northeast of point of higher land, and 15 yards north of trees along bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bethel" (S 65° 49' W).....	0	00	00	 $\frac{3}{8}$ mile.
Left corner of second story of Lowndes house.....	25	54	..	 $\frac{5}{8}$ mile.
Peak of near gable of house.....	40	54	..	 $\frac{3}{8}$ mile.
Windmill at "The Anchorage".....	101	51	..	 $\frac{3}{8}$ mile.
Right corner of old Episcopal Church tower.....	112	06	..	 $\frac{3}{8}$ mile.
Left corner of Goldsborough house.....	129	54	..	 $\frac{5}{8}$ mile.

References—Continued.

	°	'	"	
Henderson windmill.....	174	47	..	 ¾ mile.
Nail in blaze in wild-cherry tree (5 inches diameter).....	258	17	30	 16.25 meters.
Nail in blaze in locust tree (5 inches diameter).....	306	43	40	 13.76 meters.
Nail in blaze in wild-cherry tree (7 inches diameter).....	336	10	10	 21.71 meters.

ST. MICHAELS WATER TANK.

General locality.—Western side of Miles River in town of St. Michaels, on north side of Railroad Avenue, near African M. E. Church. (See Charts Nos. 32 and 34.)

Immediate locality.—Observed station is on top of a 60,000-gallon water tank on a steel tower 90 feet high.

Marks.—Observed station is spindle on center of top of water tank.

References.—None necessary.

MILLWIND.

General locality.—Western shore of Miles River at south side of entrance to Long Haul Creek, about 7½ mile northeast of St. Michaels Water Tank and 5½ mile south of Deep Water Point. (See Chart No. 32.)

Immediate locality.—Observed station is on edge of cultivated field about 8 feet above high water, 2 yards west of edge of bank, 17 yards south of edge of bluff, and 18 yards south by west of junction of bush-covered bank and washed bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"St. Michaels Water Tank" (S 49° 19' W)....	0	00	00	 ¾ mile.
Largest one of group of 3 cherry trees.....	26	45	..	 80 yards.
Nail in blaze in cedar tree (12 inches diameter).....	69	00	00	 38.94 meters.
Square chimney of Barnard house.....	88	46	..	 ½ mile.
Weather vane on square tower on house on Deep Water Point farm.....	125	13	..	 ¾ mile.
North peak of house.....	168	00	..	 1¾ miles.
Left chimney of Rieman house.....	221	09	..	 1¾ miles.
Right chimney of large modern house on Hunting Creek.....	246	41	..	 2½ miles.
Steeple on building.....	272	37	..	 4 miles.
Nail in blaze in cedar tree (10 inches diameter).....	310	07	00	 5.28 meters.
Union M. E. Church spire.....	358	26	20	 ¾ mile.

DEEWAT.

General locality.—Western shore of Miles River on Deep Water Point, about 7½ mile west-northwest of Fairview Point. (See Chart No. 32.)

Immediate locality.—Observed station is on sand and grass point about 2 feet above high water, 8 yards southwest of shore, 7 yards northwest of shore, and 10 yards west of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"St. Michaels Water Tank" (S 33° 08' W)	0	00	00	1½ miles.
Weather vane on Dodson house	53	13	..	¼ mile.
Tangent of Tilghmans Point	117	58	..	4¾ miles.
Right tangent of Parsons Island	133	28	..	7¾ miles.
Large square chimney of Starr house	179	59	..	2¾ miles.
Large chimney of house	212	08	..	1¾ miles.
Cupola on Rieman house	271	59	..	1¾ miles.
Tangent of Long Point	287	02	..	3¼ miles.
Steeple	295	04	..	4½ to 5 miles.
Large chimney of house	297	41	..	2¾ miles.
Large chimney of house	309	30	..	2¾ miles.
"St. Michaels P. E. Church spire"	353	40	40	1¾ miles.

SPAR.

General locality.—Southwestern shore of Miles River, about 1 mile southeast of entrance to Hambleton Creek and ¾ mile northwest of Deep Water Point. (See Chart No. 32.)

Immediate locality.—Observed station is on cedar and locust fringed shore, about 4 feet above high water, 11 yards west of shore, 12 yards southwest of shore, and 15 yards south of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sara" (N 39° 19' W)	0	00	00	1 mile.
Chimney of house on Tilghmans Point farm . . .	1	19	..	4 miles.
Near peak of barn beyond Herring Island . . .	42	38	..	8¾ miles.
Nail in blaze in oak tree (3 inches diameter) . .	54	59	00	4.52 meters.
Right tangent of chimney	125	32	..	1¼ miles.
Tangent of Deep Water Point	181	22	..	¾ mile.
Nail in blaze in locust tree (3 inches diameter)	240	08	40	6.84 meters.
Nail in blaze in locust tree (4 inches diameter)	279	53	30	3.58 meters.

SARA.

General locality.—Southwestern shore of Miles River, about ¾ miles south-southeast of northern end of Tilghmans Point, 1¼ miles southwest of Herring Island, and on point at eastern side of entrance to Hambleton Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in a cultivated field about 15 feet above high water, 16 yards southwest of a bluff 12 feet high with uniform slope to shore, and 20 yards east of depression 4 feet deep.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Wood" (N 52° 14' E)	0	00	00	2 miles.
West chimney of house	127	40	..	¼ mile.
Nail in blaze in hackberry tree (12 inches diameter)	158	58	50	22.02 meters.
Nail in blaze in cedar tree (12 inches diameter)	204	12	50	12.66 meters.
Right tangent of Tilghmans Point	282	58	..	3¼ miles.
"Parsons Island Water Tank"	297	11	..	6¾ miles.
South gable of barn	315	40	..	8 miles.
South gable of house	323	03	..	6 miles.
South gable of barn	340	49	..	4 miles.

SETH.

General locality.—Southwestern shore of Miles River, on a point about $2\frac{1}{4}$ miles south of northern end of Tilghmans Point and $\frac{3}{4}$ mile northwest of entrance to Porters Creek. (See Chart No. 32.)

Immediate locality.—Observed station is in clump of cedar trees about 12 feet above high water, 9 yards southwest of top of vertical bank, washed by high water, 50 yards northwest of extreme end of point, and 400 yards northeast of a house. Cement monument marking reference station is 9.56 meters S $67^{\circ} 41'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 12 inches above surface of ground.

References.—

	°	'	"	
"Herr" (N $79^{\circ} 07'$ E).....	0	00	00	 2 miles.
Nail in blaze in cedar tree (12 inches diameter).....	145	20	20	 10.89 meters.
REFERENCE STATION.....	168	34	30	 9.56 meters.
Nail in blaze in cedar tree (6 inches diameter).....	219	59	45	 4.44 meters.
South gable of house.....	282	12	..	 $5\frac{1}{4}$ miles.
South gable of barn.....	305	34	..	 6 miles.
West gable of house.....	312	30	..	 6 miles.
Cupola on barn.....	356	52	..	 3 miles.

PEARSON.

General locality.—Western shore of Miles River on Tilghmans Point about $\frac{3}{8}$ mile south-southeast of northern end of point. (See Chart No. 32.)

Immediate locality.—Observed station is on wooded bluff about 20 feet above high water, 5 yards west of top of vertical bank at shore, and 100 yards north of first point south of northern end of Tilghmans Point. Cement monument marking reference station is 12.66 meters N $86^{\circ} 03'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Green" (N $45^{\circ} 46'$ E).....	0	00	00	 $3\frac{3}{8}$ miles.
South gable of barn.....	1	14	..	 5 miles.
South chimney of house.....	11	48	..	 $3\frac{1}{2}$ miles.
West chimney of house.....	26	31	..	 $2\frac{1}{8}$ miles.
West gable of barn.....	62	31	..	 $3\frac{1}{2}$ miles.
East gable of barn.....	76	09	..	 4 miles.
West chimney of house.....	111	30	..	 $3\frac{1}{4}$ miles.
North chimney of house.....	125	20	..	 $3\frac{1}{8}$ miles.
Chimney of house.....	130	36	..	 $2\frac{1}{2}$ miles.
Nail in blaze in white oak tree (8 inches diameter).....	178	09	40	 5.31 meters.
REFERENCE STATION.....	228	11	00	 12.66 meters.
Nail in blaze in white oak tree (12 inches diameter).....	239	19	20	 9.99 meters.
South gable of house on Parsons Island.....	317	17	..	 $3\frac{1}{2}$ miles.
South gable of barn.....	350	02	..	 $4\frac{3}{8}$ miles.

DIXON.

General locality.—Southeastern side of Eastern Bay on Tilghmans Point about half way between Eastern Bay and Miles River $\frac{3}{4}$ mile southwest of northern end of point and $1\frac{1}{8}$ miles northeast of Claiborne Wharf. (See Chart No. 32.)

Immediate locality.—Observed station is on top of a 2-story square frame house on Tilghmans Point farm.

Marks.—Observed station is center of upright staff, 3 inches square, set in the center of trapdoor at apex of square roof.

References.—None necessary.

ROD.

General locality.—Eastern shore of the upper part of Harris Creek on southeastern side of entrance to Northeast Branch. (See Charts Nos. 32 and 34.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 5 yards southeast of shore, and 2 yards southeast of top of bank with uniform slope to shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Otto" (S 0° 41' W).....	0	00	00	 $\frac{3}{4}$ mile.
North chimney of house.....	5	31	..	 $1\frac{1}{4}$ miles.
East chimney of house at Bozman.....	14	01	..	 $2\frac{1}{4}$ miles.
East gable of small barn.....	92	12	..	 $\frac{3}{4}$ mile.
North chimney of Warner House.....	108	42	..	 $\frac{3}{4}$ mile.
Cupola on tin-roofed barn.....	139	52	..	 $\frac{3}{4}$ mile.
Right tangent of barn.....	186	26	..	 $1\frac{1}{2}$ miles.
South chimney on Harrison house.....	218	06	..	 250 yards.
West gable of barn.....	300	37	..	 $\frac{3}{4}$ mile.
Lone persimmon tree (12 inches diameter)...	355	01	..	 250 yards.

OTTO.

General locality.—Eastern shore of upper Harris Creek about $\frac{1}{2}$ mile south of junction of Northeast Branch and Northwest Branch. (See Charts Nos. 32 and 34.)

Immediate locality.—Observed station is in a cultivated field about 8 feet above high water, 18 yards east of top of vertical bank 6 feet high washed by high water, and 100 yards north of old fence covered with vines.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Miller" (S 11° 56' E).....	0	00	00	 $\frac{1}{4}$ mile.
Nail in blaze of locust tree (4 inches diameter) 18	18	10	.....	28.03 meters.
North chimney of Bridges house.....	43	27	..	 $2\frac{1}{2}$ miles.
East chimney of Harrison house.....	56	53	..	 1 mile.
Nail in blaze in one of twin locust trees (15 inches diameter).....	70	39	40	 12.67 meters.
Left tangent of Seth bathhouse.....	92	43	..	 $\frac{1}{4}$ mile.
South gable of Warner barn.....	145	31	..	 1 mile.
East chimney of house.....	158	52	..	 $1\frac{3}{4}$ miles.
Cupola on tin-roofed barn.....	166	16	..	 1 mile.
South chimney of Marion Harrison house....	204	00	..	 $\frac{3}{4}$ mile.
North chimney of house.....	264	37	..	 $\frac{3}{4}$ mile.
North gable of barn.....	357	54	..	 $\frac{1}{4}$ mile.

HADDAWAY.

General locality.—Eastern shore of Chesapeake Bay on Lows Point between Harbor Cove and Haddaway Cove about 2 miles east of north end of Poplar Island. (See chart No. 33.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 65 yards north of shore, 100 yards south of shore, 140 yards east of shore, and 25 yards west of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Valliant" (S 82° 08' W).....	0	00	00	2½ miles.
Left peak of barn on Poplar Island.....	0	21	..	2¾ miles.
"Bloody Point Bar Light".....	60	23	10	5 miles.
Left chimney on large house.....	80	54	..	6 miles.
Chimney on middle of large house.....	87	14	..	5¾ miles.
Peak of house between two chimneys.....	109	00	..	9½ miles.
Chimney of two-story house.....	125	55	..	4 miles.
"Kemp Tower".....	127	16	50	4½ miles.
Nail in blaze in pine tree (14 inches diameter).....	139	39	50	36.78 meters.
Nail in blaze in pine tree (12 inches diameter).....	164	52	10	28.77 meters.
Nail in blaze in pine tree (8 inches diameter).....	213	45	20	24.66 meters.
Chimney on ell of house.....	275	10	..	1¾ miles.
Chimney of house on Poplar Island.....	330	29	..	2¼ miles.
Chimney of house on Poplar Island.....	359	01	..	2¾ miles.

VALLIANT.

General locality.—Eastern side of Chesapeake Bay on western shore of Poplar Island about ¾ mile southwest of extreme north end of island. (See Chart No. 33.)

Immediate locality.—Observed station is in cultivated land about 5 feet above high water, 15 yards north by east of a line of small trees, 72 yards east by south of shore at end of line of trees, and 210 yards south by west of point of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bloody Point Bar Light" (N 4° 58' W)....	0	00	00	4½ miles.
Near peak of large building.....	14	07	..	5 miles.
Near chimney of large house.....	19	57	..	6½ miles.
Near corner of shanty in field.....	81	17	..	200 yards.
Chimney of house.....	94	31	..	¼ mile.
Flagstaff on Lowes Wharf.....	100	59	..	3 miles.
Chimney of house on point behind trees.....	122	35	..	2¾ miles.
Chimney of small house.....	164	34	..	¾ mile.
Nail in blaze in peach tree (4 inches diameter).....	176	13	44	15.14 meters.
Nail in blaze in persimmon tree (3 inches diameter).....	230	44	00	11.90 meters.
Nail in blaze in peach tree (2½ inches diameter).....	262	51	30	17.83 meters.

POPLAR SOUTH.

General locality.—Eastern side of Chesapeake Bay on Poplar Island on a point of land at southern side of Poplar Island Harbor. (See Chart No. 33.)

Immediate locality.—Observed station is on a sandy marsh about 1 foot above high water, 7 yards west-southwest of shore of harbor, 16 yards east-northeast of bay shore, 60 yards north-northwest of extreme point of largest one of the group of islands known as Poplar Island, and 11 yards north of a lone pine tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (S 1° 06' E).....	0	00	00	8 miles.
Near peak of house.....	49	34	..	11½ miles.
Left tower of hotel.....	61	47	..	9½ miles.
Left tangent of house.....	79	30	..	9½ miles.
Left tangent of house.....	101	47	..	9 miles.
East peak of Howeth house.....	157	38	..	¾ mile.
Lightning rod near east chimney of house....	189	25	..	1¾ miles.
Right chimney of Valliant house.....	208	11	..	¾ mile.
"Kemp Tower".....	221	57	10	6½ miles.
Left corner of left oyster house at Lowes				
Wharf.....	254	53	..	2¾ miles.
Chimney of house.....	262	14	..	2¾ miles.
Square cupola.....	336	05	..	5 miles.
High cupola.....	336	10	..	5 miles.
Nail in blaze in pine tree (12 inches diam-				
eter).....	345	01	30	10.89 meters.

GREAT.

General locality.—Eastern shore of Chesapeake Bay on Great Marsh Point about 1 mile east of south-east end of Poplar Island. (See Chart No. 33.)

Immediate locality.—Observed station is on marsh point about 2 feet above high water, 40 yards east of shore, 40 yards southeast of shore, 50 yards northeast of shore, and 250 yards from woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (S 13° 18' W).....	0	00	00	7¾ miles.
Howeth house.....	101	17	..	2¾ miles.
Near peak of house on Poplar Island.....	121	51	..	2½ miles.
"Bloody Point Bar Light".....	142	18	30	6½ miles.
Right end of house.....	295	39	..	1 mile.
Near peak of house.....	324	02	..	¼ mile.
Chimney of house.....	340	51	..	¾ mile.

FRONT.

General locality.—Eastern shore of Chesapeake Bay about ¼ mile north of entrance to Front Creek, 7½ mile north of Knapps Narrows, and 1½ miles southeast of southeast end of Poplar Island. (See Chart No. 33.)

Immediate locality.—Observed station is about 3 feet above high water, 13 yards north-northeast of shore, 18 yards southeast of shore, 25 yards east of extreme end of point, and near several dead trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (S 15° 04' W).....	0	00	00	6½ miles.
Chimney of house.....	127	59	..	3¼ miles.
Right peak of Valliant house.....	129	49	..	2¾ miles.
"Bloody Point Bar Light".....	144	10	30	7¾ miles.
Nail in blaze in pine tree (5 inches diameter) .	223	49	20	14.54 meters.
Nail in blaze in pine tree (4 inches diameter) .	274	37	40	11.82 meters.
Nail in blaze in pine tree (4 inches diameter) .	317	37	20	11.95 meters.
Near peak of large barn.....	334	58	..	1 mile.

WAP.

General locality.—Eastern shore of Chesapeake Bay on a point about 4¾ miles north by east of Sharps Island Light and 1 mile south of Knapps Narrows. (See Chart No. 33.)

Immediate locality.—Observed station is on a point about 3 feet above high water, 56 yards east of extreme end of point, 68 yards north by east of shore, 83 yards south by west of shore, and 3 yards west-northwest of edge of cultivated land.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (S 18° 04' W).....	0	00	00	4¾ miles.
Nail in blaze in pine tree (6 inches diameter) .	16	57	00	32.99 meters.
East chimney of Howeth house.....	136	00	..	4¾ miles.
Chimney of house.....	181	12	..	1½ miles.
Near peak of house showing over woods.....	200	01	..	¼ mile.
Nail in blaze in persimmon tree (10 inches diameter).....	263	54	50	61.80 meters.
Nail in blaze in persimmon tree (5 inches diameter).....	279	10	00	61.23 meters.
West peak of large house.....	305	27	..	¾ mile.
Square cupola.....	322	20	20	1 mile.
High cupola.....	323	05	30	1 mile.
Chimney of house with three side gables.....	335	49	..	¾ mile.
Right tangent of point.....	347	09	..	1¾ miles.
Left tangent of old hotel building on Sharps Island.....	350	35	40	6 miles.

SOUTHERN M. E. CHURCH.

General locality.—Eastern shore of Chesapeake Bay on Tilghman Island about 1¼ miles north of Blackwalnut Point and 2 miles south of Knapps Narrows. (See Chart No. 33.)

Immediate locality.—Observed station is about ¼ mile inshore from Chesapeake Bay on west side of main road on building known as the St. Johns Chapel (Southern M. E. Church).

Marks.—Observed station is center of bell cupola on church.

References.—None necessary.

BLACK.

General locality.—Eastern shore of Chesapeake Bay on Blackwalnut Point at north side of entrance to Choptank River about 2¾ miles northeast of Sharps Island Light. (See Charts Nos. 33 and 36.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 35 yards east-northeast of edge of bank, 45 yards west of edge of bank, 65 yards northwest of edge of bank, and 130 yards south of a lone apple tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (S 43° 37' W).....	0	00	00	2¾ miles.
Near peak of old house.....	123	10	..	½ mile.
Lone apple tree.....	133	16	..	131 yards.
Chimney of house among trees.....	145	38	..	1¾ miles.
Right chimney of house near water.....	163	31	..	1 mile.
Right chimney of large house.....	211	27	..	7 miles.
"Choptank River Light".....	232	11	30	8½ miles.
Near peak of barn.....	253	22	..	6 miles.
Left chimney of house.....	270	12	..	3½ miles.
Chimney outside left end of house.....	283	35	..	7 miles.
Near peak of old hotel building, on Sharps Island.....	337	47	..	3½ miles.

SHARPS ISLAND LIGHT.

General locality.—Eastern side of Chesapeake Bay off entrance to Choptank River, about 1 mile north-northwest of Sharps Island and 2½ miles southwest of Blackwalnut Point. (See Charts Nos. 33 and 36.)

Immediate locality.—Observed station is on structure with a cylindrical foundation known as Sharps Island Light.

Marks.—Observed station is center point of lantern on Sharps Island Light.

References.—

	°	'	"	
"Black" (N 43° 36' E).....	0	00	00	2¾ miles.

JERE.

General locality.—Eastern side of Chesapeake Bay on Sharps Island, about 1½ miles south-southeast of Sharps Island Light. (See Charts Nos. 33 and 36.)

Immediate locality.—Observed station is on hard ground about 7 feet above high water, 95 yards south-southeast of old hotel building, 95 yards west-southwest of shore, 150 yards southwest of a point, and in such a position that Sharps Island Light shows to the right of the old hotel building.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (N 24° 06' W).....	0	00	00	1½ miles.
Church cupola.....	46	35	50	5¼ miles.
Chimney on left end of roof of large house...	47	44	..	5 miles.
Chimney of large house.....	104	25	..	4¼ miles.
Large chimney of large house.....	115	46	..	4¾ miles.
Chimney on right end of large house.....	142	21	..	5¾ miles.
Near corner of house.....	346	59	..	95 yards.

BAR.

General locality.—Western shore of entrance to Harris Creek on Upper Bar Neck Point about 1¾ miles north-northeast of Blackwalnut Point and 1½ miles south-southeast of Tilghman Island Wharf. (See Chart No. 33.)

Immediate locality.—Observed station is in cultivated field about 6 feet above high water, 3 yards west of edge of bank, and 60 yards north of line of trees at edge of marsh. Cement monument marking reference station is 45.81 meters S 83° 00' W of observed station, nearly on line to large lone persimmon tree 15 inches diameter.

Marks.—Observed station is center of 4-inch tile pipe with top about 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	''	
"Large Water Tank" (S 61° 46' E)	0	00	00	9¼ miles.
Nail in blaze in oak stump	63	18	00	51.17 meters.
Nail in blaze in wild cherry tree	78	58	40	46.66 meters.
Nail in blaze in cedar tree	88	35	30	47.69 meters.
Nail in blaze in lone persimmon tree	144	33	10	49.48 meters.
REFERENCE STATION	144	46	00	45.81 meters.
Right chimney of first house to right of woods	205	39	..	¾ mile.
Schoolhouse cupola	213	11	40	1¾ miles.
Stack of cannery	216	19	..	1¾ miles.
Stack of cannery	227	10	..	1¾ miles.
Right chimney of house showing over woods	239	07	..	2½ miles.
Neavitt schoolhouse cupola	269	25	..	3¾ miles.
Chimney of house	276	58	..	2½ miles.

M. E. CHURCH.

General locality.—Eastern shore of Chesapeake Bay on Tilghman Island, about 2¾ miles north of Blackwalnut Point and ¾ mile south of Knapps Narrows. (See Chart No. 33.)

Immediate locality.—Observed station is on main road about halfway between the shores of Chesapeake Bay and Harris Creek, about ¼ mile east of Tilghman Island Wharf on building known as Tilghman Island M. E. Church.

Marks.—Observed station is center of small square cupola on church.

References.—None necessary.

AVALON.

General locality.—Western shore of Harris Creek on Tilghman Island on point about 100 yards north of shore end of Tilghman Island Wharf. (See Chart No. 33.)

Immediate locality.—Observed station is on marsh and clay point, about 1 foot above high water, 9 yards south of shore, 12 yards northwest of shore, 20 yards north-northwest of northeast corner of a house, about 1 yard east of produced line of end of house, 10 yards north of 2 pine trees, and 6 yards north-northwest of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Narrows" (N 34° 29' E)	0	00	00	¾ mile.
Near peak of house with 2 chimneys	2	47	..	3¼ miles.
Stack of cannery on wharf	8	34	..	¼ mile.
Near peak of house with 2 chimneys	35	40	..	2½ miles.
Chimney next to skylight on highest house on Tilghman Island Wharf	80	38	..	¼ mile.
Stack of cannery	150	07	..	¼ mile.
Nail in blaze in pine tree (14 inches diam- eter)	154	00	30	10.21 meters.
Northeast corner of a house	161	11	50	17.24 meters.
Nail in blaze in northwest side of pine tree (15 inches diameter)	181	14	00	9.81 meters.
Nail in blaze in cherry tree (12 inches diam- eter)	224	12	30	10.66 meters.
Lightning rod on east peak of house	243	47	..	150 yards.
Weather vane on schoolhouse	270	59	10	¼ mile.
Near peak of house with chimney	322	18	..	300 yards.

SCHOOLHOUSE CUPOLA.

General locality.—Eastern shore of Chesapeake Bay on Tilghman Island about 3 miles north of Blackwalnut Point and $\frac{1}{2}$ mile south of Knapps Narrows. (See Chart No. 33.)

Immediate locality.—Observed station is on main road about halfway between the shores of Chesapeake Bay and Harris Creek about $\frac{3}{8}$ mile northwest of Tilghman Island Wharf on schoolhouse building.

Marks.—Observed station is center of bell cupola on schoolhouse.

References.—None necessary.

PEOPLES CHAPEL.

General locality.—Eastern shore of Chesapeake Bay on Tilghman Island about $3\frac{1}{4}$ miles north of Blackwalnut Point and $\frac{1}{4}$ mile south of Knapps Narrows. (See Chart No. 33.)

Immediate locality.—Observed station is in the town of Tilghman about $\frac{1}{2}$ mile north of Tilghman Island Wharf on building known as Peoples Chapel.

Marks.—Observed station is center of small square cupola on chapel.

References.—None necessary.

NARROWS.

General locality.—Western shore of Harris Creek about $\frac{1}{4}$ mile northeast of east entrance to Knapps Narrows, and $1\frac{1}{4}$ miles west of Change Point. (See Chart No. 33.)

Immediate locality.—Observed station is in cultivated field back of a fringe of trees about 6 feet above high water, 45 yards west-northwest of shore, 15 yards west-northwest of edge of field, 90 yards south-southwest of corner of field, and 145 yards northeast of a point of bank where wire fence meets trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Eagle" (N 37° 30' E).....	0	00	00	1 mile.
Near peak of Morris House with two chimneys	0	41	..	2 $\frac{3}{4}$ miles.
Nail in blaze in wild-cherry tree (6 inches diameter).....	23	33	40	22.07 meters.
Near peak of Wayman house.....	56	08	..	1 $\frac{1}{2}$ miles.
Nail in blaze in mulberry tree (7 inches diameter).....	80	59	10	12.90 meters.
"Choptank River Light".....	88	32	00	8 $\frac{3}{4}$ miles.
Nail in blaze in pine tree (12 inches diameter)	110	15	00	17.83 meters.
Near corner peak of house on Tilghman Island Wharf.....	160	59	..	$\frac{3}{4}$ mile.
Left stack of cannery.....	172	51	..	1 mile.
Near peak of hotel with chimney almost in range.....	183	53	..	$\frac{7}{8}$ mile.
"Peoples Chapel".....	206	48	40	$\frac{5}{8}$ mile.
Near peak of house with one chimney.....	284	38	..	$\frac{3}{8}$ mile.
Left peak of house.....	326	02	..	$\frac{1}{4}$ mile.

EAGLE.

General locality.—Western shore of Harris Creek on Bald Eagle Point about $\frac{3}{4}$ mile west of Turkey Neck Point, and 2 miles north-northeast of Tilghman Island Wharf. (See Chart No. 33.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 2 yards west of shore, 45 yards north by west of point of marsh, 150 yards south by east of point of marsh, and 120 yards east of woods. Cement monument marking reference station is 15.41 meters S 88° 35' W of observed station.

Marks.—Observed station is a nail in a cedar stub 4 inches diameter projecting 2 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Dunk" (N 0° 42' E).....	0	00	00	1 mile.
Near peak of house on Indian Point.....	20	44	..	1 $\frac{3}{8}$ miles.
Square chimney of house with ell.....	46	03	..	1 $\frac{3}{8}$ miles.
Center of chimney of house among trees....	86	17	..	1 $\frac{3}{4}$ miles.
Large chimney of house.....	112	42	..	1 $\frac{3}{8}$ miles.
Right chimney of house.....	131	57	..	1 $\frac{3}{4}$ miles.
Stack of cannery.....	213	34	..	1 $\frac{3}{8}$ miles.
REFERENCE STATION.....	267	52	50	15.41 meters.
Near peak of house.....	342	51	..	$\frac{3}{8}$ mile.

DUNK.

General locality.—Western shore of Harris Creek on Seths Point at northeast side of entrance to Dun Cove, about 3 miles from the Choptank River. (See Chart No. 33.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 6 yards northwest of shore, 23 yards north-northeast of point, 26 yards northeast of shore of Duns Cove, 12 yards west of shore of Harris Creek, 100 yards east of bushes extending north and south, and 250 yards east of woods. Cement monument marking reference station is 11.22 meters N 78° 54' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of marsh. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Hawk" (N 2° 48' W).....	0	00	00	$\frac{1}{2}$ mile.
Near peak of house with square chimneys....	1	50	..	1 $\frac{3}{8}$ miles.
Near peak of roof of house with three chimneys	18	22	..	2 miles.
Weathervane on right end of house with two chimneys.....	41	35	..	1 $\frac{3}{4}$ miles.
Near peak of large barn.....	57	14	..	1 mile.
Cupola on Neavitt School.....	129	32	30	1 $\frac{3}{8}$ miles.
Weathervane on middle of house with two chimneys.....	151	00	..	1 $\frac{3}{4}$ miles.
Chimney on left end of house among trees....	155	53	..	2 miles.
Chimney at left of house among trees.....	204	26	..	1 $\frac{1}{2}$ miles.
REFERENCE STATION.....	283	54	20	11.22 meters.
Brick house.....	338	06	..	$\frac{1}{2}$ mile.
Left peak of old house.....	352	04	..	$\frac{3}{8}$ mile.

HAWK.

General locality.—Western shore of Harris Creek about $\frac{1}{2}$ mile north of Seths Point and $\frac{1}{2}$ mile west of Indian Point. (See Chart No. 33.)

Immediate locality.—Observed station is in cultivated field about 4 feet above high water and 22 yards northwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Dunk" (S 2° 48' E).....	0	00	00	$\frac{1}{2}$ mile.
Nail in blaze in mulberry tree (8 inches diameter).....	21	00	30	13.53 meters.
North chimney of Harrison house.....	47	04	..	400 yards.
Dead pine tree with hawk nest in top.....	141	11	..	$\frac{1}{4}$ mile.
Cupola on house.....	168	35	..	1 $\frac{1}{4}$ miles.

References—Continued.

	°	'	"	
South chimney of house.....	182	46	..	1½ miles.
Chimney of McQuay oyster house.....	227	23	..	1¾ miles.
South gable of barn.....	252	12	..	1¾ miles.
North chimney of house.....	275	58	..	1 mile.
Nail in blaze in hackberry tree (10 inches diameter).....	304	34	..	8.62 meters.
Chimney of house.....	312	35	..	1½ miles.
North gable of barn.....	330	40	..	2¼ miles.

SMITH.

General locality.—Eastern shore of Harris Creek on Smith Point between Briary Cove and Waterhole Cove and about ¾ mile west-southwest of Little Neck Point. (See Chart No. 33.)

Immediate locality.—Observed station is on marsh point, about 1 foot above high water, and 6 yards west of shore. Cement monument marking reference station is 13.44 meters N 62° 39' W of observed station.

Marks.—Observed station is nail in center of 3-inch stub projecting 1 foot above surface of ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Hawk" (S 12° 31' W).....	0	00	00	¾ mile.
Chimney of small house.....	3	01	..	1¼ miles.
North gable of barn.....	21	32	..	1 mile.
North chimney of house.....	26	39	..	½ mile.
North edge of Lamdin house.....	73	32	..	½ mile.
REFERENCE STATION.....	104	49	40	13.44 meters.
South chimney of house.....	140	28	..	¾ mile.
East chimney of house.....	174	38	..	¾ mile.
Chimney of house.....	206	27	..	2 miles.
West gable of McQuay oyster house.....	242	43	..	¾ mile.
Chimney of McQuay house.....	247	39	..	¾ mile.
Chimney of small house.....	270	46	..	¾ mile.
South chimney of Edmonds house.....	288	13	..	¾ mile.
North chimney of house.....	308	16	..	1 mile.

BRIARY.

General locality.—Western shore of Harris Creek, on a point at northeastern side of entrance to Briary Cove, about ¾ mile west of Little Neck Point. (See Chart No. 33.)

Immediate locality.—Observed station is on a marsh point about 10 yards from extreme end of point.

Marks.—Observed station is center of 3-inch cedar stub projecting 8 inches above surface of ground.

References.—

NOTE.—This station was established in 1900 and was not reoccupied or re-marked during oyster survey, although relocated by concluded angles.

VINE.

General locality.—Western shore of Harris Creek about ¼ mile north-northwest of Little Neck Point. (See Charts Nos. 33 and 34.)

Immediate locality.—Observed station is in cultivated field about 7 feet above high water, 6 yards northwest of shore, and 3 yards northwest of top of vertical bank. Cement monument marking reference station is 15.86 meters N 67° 54' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Smith" (S 58° 54' W).....	0	00	00	¾ mile.
REFERENCE STATION.....	53	11	50	15.86 meters.
Cupola on barn.....	59	52	..	1 mile.
South gable of barn.....	91	31	..	¾ mile.
Large pine tree.....	182	09	..	100 yards.
North chimney of house.....	199	50	..	1 7/8 miles.
West chimney of house.....	210	28	..	1 3/8 miles.
"Bozman M. E. Church Spire".....	213	43	..	1 3/8 miles.
Chimney of Bridges kitchen.....	217	27	..	¾ mile.
West chimney of house.....	250	29	..	½ mile.
North chimney of house.....	295	45	..	½ mile.
West chimney of Edmonds house.....	309	43	..	¾ mile.
Lomax windmill.....	326	00	..	3 1/2 miles.

CUMMINGS.

General locality.—Western shore of Harris Creek, on point on western side of entrance to Cummings Creek, about ½ mile north-northeast of Little Neck Point. (See Charts Nos. 33 and 34.)

Immediate locality.—Observed station is in a cultivated field about 10 feet above high water, 70 yards north of extreme end of point, and 50 yards northwest of lone pine tree near shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Dog" (N 49° 51' E).....	0	00	00	¾ mile.
West gable of barn at Bozman.....	52	24	..	1 1/4 miles.
"Bozman M. E. Church spire".....	56	36	..	1 1/8 miles.
West gable of house.....	60	30	..	1 1/4 miles.
Lone pine tree near shore.....	75	31	..	50 yards.
South chimney of house.....	122	51	..	1 1/2 miles.
West gable of McQuay oysterhouse.....	149	15	..	½ mile.
Cupola on barn.....	225	28	..	1 1/4 miles.
Cupola on barn.....	286	52	..	1 1/2 miles.
West chimney of house.....	297	13	..	1 mile.
West chimney of house.....	337	32	..	1 1/4 miles.

DAN.

General locality.—Eastern shore of Harris Creek on Little Neck Point about ¾ mile east-northeast of Smith Point. (See Charts Nos. 33 and 34.)

Immediate locality.—Observed station is on narrow neck of oyster shells, about 35 yards east of south-west corner of McQuay's oysterhouse, 60 yards east of the extreme west end of point, 25 yards west of bank at edge of woods, and 3 yards south of shell path to oysterhouse. Cement monument marking reference station is 21.37 meters S 69° 28' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 5 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Fox" (N 64° 54' E).....	0	00	00	½ mile.
REFERENCE STATION.....	45	37	45	21.37 meters.
Nail in blaze in persimmon tree (4 inches diameter).....	50	32	00	21.84 meters.
Nail in blaze in persimmon tree (6 inches diameter).....	75	34	00	22.99 meters.

References—Continued.

	°	'	''	
North chimney of Edmonds house	134	29	..	5/8 mile.
North gable of barn	166	20	..	2 miles.
Stack of cannery at Sherwood	190	40	..	1 1/4 miles.
Cupola on house	210	55	..	1 1/4 miles.
Chimney of small house	227	04	..	1 1/4 miles.
East gable of McQuay oysterhouse	237	37	..	35 yards.
Church spire at Wittman	292	46	..	2 1/2 miles.
Chimney of small house	321	41	..	1 1/2 miles.
Chimney of small house	355	49	..	1 1/2 miles.

EDMOND.

General locality.—Eastern shore of Harris Creek, about 5/8 mile south-southwest of Little Neck Point, and 3/4 mile north-northeast of Indian Point. (See Chart No. 33.)

Immediate locality.—Observed station is in southwest corner of yard of a house about 15 feet above high water, 7 yards southeast of top of bank 15 feet high, and nearly on line with south side of house. Cement monument marking reference station is 16.56 meters S 59° 29' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	''	
"Dan" (N 21° 25' E)	0	00	00	5/8 mile.
Southwest corner of Edmonds house	83	52	..	35 yards.
REFERENCE STATION	99	06	10	16.56 meters.
North chimney on house	149	51	..	3/4 mile.
North chimney of house	217	13	..	1 1/4 miles.
Chimney of house	245	25	..	1 1/4 miles.
Stack of cannery at Sherwood	261	14	..	1 1/4 miles.
Cupola on house	281	45	..	1 3/8 miles.
East gable of tin-roof barn	316	25	..	1 1/4 miles.
East gable of McQuay's oysterhouse	357	49	..	5/8 mile.

WARRIOR.

General locality.—Western shore of Harris Creek on Indian Point, about 2 1/2 miles north of Change Point. (See Chart No. 33.)

Immediate locality.—Observed station is in cultivated field about 7 feet above high water, 20 yards southeast of shore, 14 yards southeast of top of bank with uniform slope to shore, and 40 yards northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Edmond" (N 29° 15' E)	0	00	00	5/8 mile.
South gable of barn	14	20	..	1/2 mile.
East chimney of house	18	11	..	1 mile.
North chimney of house	55	57	..	3/8 mile.
South chimney of house	99	22	..	1/2 mile.
Chimney of house	119	02	..	1 mile.
North gable of barn	131	35	..	2 miles.
North chimney of house	234	03	..	3/4 mile.
Cupola on house	297	12	..	1 1/4 miles.
South chimney of house	307	56	..	2 miles.
West gable of tin-roof barn	323	41	..	2 1/4 miles.
Chimney on McQuay oysterhouse	354	38	..	1 1/4 miles.

BALL.

General locality.—Eastern shore of Harris Creek about $\frac{3}{4}$ mile south-southeast of Indian Point and 1 mile north of Turkey Neck Point. (See Chart No. 33.)

Immediate locality.—Observed station is in cultivated field about 10 feet above high water, 15 yards east of shore, 8 yards from top of bank, and 50 yards north of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Eagle" (S 45° 39' W).....	0	00	00	1¼ miles.
North chimney of house.....	13	27	..	1½ miles.
South chimney of brick house.....	72	08	..	1¼ miles.
Chimney of house.....	91	35	..	1¾ miles.
Stack of cannery at Sherwood.....	93	42	..	1¾ miles.
Cupola on house.....	101	21	..	2½ miles.
North gable of barn.....	168	26	..	400 yards.
Northwest corner of Ball house.....	294	38	..	49 yards.
North gable of house.....	310	45	..	¾ mile.
Right tangent of Turkey Point.....	322	24	..	1½ miles.
Stack of cannery at Tilghman Island.....	353	02	..	3½ miles.

HEN.

General locality.—Eastern shore of Harris Creek on Turkey Neck Point about $\frac{3}{4}$ mile north of Change Point. (See Chart No. 33.)

Immediate locality.—Observed station is in a cultivated field about 8 feet above high water, 9 yards southeast of edge of bank, 17 yards east by north of point of bank at line of trees, and 16 yards east-northeast of edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Change" (S 6° 09' E).....	0	00	00	¾ mile.
Nail in blaze in cedar tree.....	26	39	10	15.57 meters.
Nail in blaze in cedar tree.....	53	33	50	15.29 meters.
Stack of cannery.....	64	03	..	2¼ miles.
Lomax windmill.....	87	47	20	1½ miles.
Left peak of house with two chimneys.....	129	47	..	1 mile.
Left chimney of brick house.....	157	58	..	1½ miles.
Tower of house.....	166	56	..	3 miles.
Near chimney of house.....	193	46	..	1½ miles.
Near peak of house.....	245	28	..	¾ mile.
Right peak of house.....	308	30	..	¾ mile.
Nail in blaze in locust tree.....	350	22	00	22.85 meters.

CHANGE, 1910.

General locality.—Eastern shore of Harris Creek on Change Point about $1\frac{1}{4}$ miles east of Knapps Narrows. (See Charts Nos. 33 and 34.)

Immediate locality.—Observed station is in cultivated field about 8 feet above high water, 45 yards north-northeast of extreme end of point, 55 yards northwest of edge of bank, 35 yards east of edge of bank, 70 yards southeast by south of corner of wire fence, and 70 yards south-southwest of wire fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Nelson 3" (S 53° 21' E).....	0	00	00	1½ miles.
"Windmill".....	5	53	50	9¼ miles.
Near peak of house.....	25	43	..	7 miles.
Chimney of house.....	89	04	..	2½ miles.
Near peak of house.....	117	29	..	2½ miles.
Near peak of storehouse on Tilghman Island				
Wharf.....	123	16	..	1¾ miles.
Near peak of house.....	131	01	..	2½ miles.
Near chimney of brick house.....	210	58	..	2½ miles.
Right chimney of house.....	278	54	..	¼ mile.
Near peak of house.....	307	44	..	½ mile.

CHEF.

General locality.—Eastern shore of Chesapeake Bay on Cook Point at southern side of entrance to Choptank River about 4 miles east of Sharps Island. (See Charts Nos. 33, 36, and 37.)

Immediate locality.—Observed station is in cultivated field about 8 feet above high water, 30 yards inside of fringe of trees parallel with shore, 45 yards southwest of eastern end of fringe of trees, 70 yards east of western end of fringe of trees, and 190 yards northwest by north of gate in fence running east and west.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sharps Island Light" (N 84° 01' W).....	0	00	00	4½ miles.
Nail in blaze in wild-cherry tree (4 inches diameter).....	18	41	10	31.43 meters.
Nail in blaze in locust tree (5 inches diameter).....	46	09	20	28.53 meters.
Large chimney of house.....	51	57	..	4¾ miles.
Nail in blaze in locust tree (5 inches diameter).....	79	02	50	29.94 meters.
Left peak of house.....	81	21	..	5 miles.
Near peak of barn.....	98	22	..	7½ miles.
Nail in blaze in locust tree (6 inches diameter).....	99	50	30	43.16 meters.
Near chimney on largest building in group.....	127	24	..	6 miles.
Left end of house.....	150	48	30	7½ miles.
"Choptank River Light".....	158	02	10	5½ miles.
Lone persimmon tree.....	165	47	..	231 yards.
"Large Water Tank".....	177	43	10	6¾ miles.
Right chimney outside house.....	194	02	..	2¼ miles.
Chimney on right one of two houses.....	222	37	..	¼ mile.
Right peak of barn.....	251	19	..	¼ mile.
Right peak of hotel on Sharps Island.....	341	27	..	4 miles.

DOG.

General locality.—Eastern shore of Cummings Creek about ¾ mile north of Harris Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about on level with high water, and 16 yards west of clump of myrtle bushes. Cement monument marking reference station is 14.43 meters S 65° 30' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Cummings" (S 49° 51' W).....	0	00	00	 ¾ mile.
East gable of old barn.....	75	03	..	 ¾ mile.
West chimney of house.....	110	30	..	 1¼ miles.
South chimney of house.....	129	00	..	 ¾ mile.
South chimney of house.....	133	50	..	 ¾ mile.
Nail in blaze in pine tree (12 inches diameter).....	136	59	30	 35.70 meters.
REFERENCE STATION.....	244	38	10	 14.43 meters.
West chimney of house.....	325	16	..	 1¼ miles.
East chimney of house.....	332	55	..	 1¼ miles.
East edge of McQuay's oysterhouse.....	342	26	..	 ¾ mile.
Chimney of house.....	348	58	..	 2¼ miles.

RABBIT.

General locality.—Western shore of Harris Creek on eastern side of entrance to Cummings Creek about ¾ mile northeast of Little Neck Point. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field, about 8 feet above high water, 6 yards north of shore, 2 yards north of top of bank, and 50 yards east of the extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Koot" (S 52° 52' E).....	0	00	00	 ¼ mile.
Nail in blaze in pine tree (6 inches diameter).....	20	16	00	 3.17 meters.
North gable of barn.....	67	14	..	 ½ mile.
North chimney of house.....	86	05	..	 1 mile.
Stack of cannery at Sherwood.....	118	15	..	 2 miles.
Nail in blaze in pine tree (6 inches diameter).....	123	04	30	 8.73 meters.
Left edge of barn.....	182	34	..	 1¼ miles.
Left gable of old barn.....	281	42	..	 400 yards.
Chimney of small house.....	315	28	..	 1¼ miles.
Flagstaff on Bozman Hall.....	346	26	..	 ¾ mile.

GRACE.

General locality.—Northwestern shore of Harris Creek about ¾ mile east of entrance to Cummings Creek, and 1 mile northeast of Little Neck Point. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, and 5 yards north of the extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Rabbit" (S 82° 20' W).....	0	00	00	 ¼ mile.
Nail in blaze in locust tree (12 inches diameter).....	85	01	10	 4.64 meters.
North chimney of Miller house.....	145	33	..	 1 mile.
Chimney of small house.....	165	31	..	 ¾ mile.
South chimney of house.....	176	05	..	 ½ mile.
North chimney of house.....	183	08	..	 ¾ mile.
East chimney of house.....	220	03	..	 ½ mile.
West chimney of house.....	249	24	..	 ¾ mile.
North chimney of Bridges house.....	295	26	..	 ¾ mile.
East gable of McQuay's oysterhouse.....	335	44	..	 1 mile.

MINK.

General locality.—Western shore of Harris Creek about $\frac{1}{2}$ mile northeast of entrance to Cummings Creek and $\frac{1}{4}$ mile northwest of town of Bozman. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 2 yards northwest of shore, and 40 yards northeast of wire and board fence. Cement monument marking reference station is 8.73 meters N $53^{\circ} 51'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Harrison" (N $16^{\circ} 58'$ E).....	0	00	00	$\frac{1}{4}$ mile.
South chimney of Harrison house.....	10	03	..	2 miles.
South chimney of Miller house.....	32	35	..	$\frac{1}{8}$ mile.
North chimney of house.....	45	04	..	$\frac{1}{2}$ mile.
Chimney of house.....	86	35	..	$\frac{1}{2}$ mile.
Flagpole on Bozman Hall.....	135	42	..	$\frac{1}{2}$ mile.
East chimney of house.....	155	07	..	$\frac{3}{4}$ mile.
Chimney of small house.....	182	28	..	$\frac{3}{4}$ mile.
North chimney of Bridges house.....	190	39	..	1 mile.
Nail in blaze in locust tree (5 inches diameter).....	240	57	10	12.21 meters.
REFERENCE STATION.....	289	10	20	8.73 meters.
Nail in blaze in mulberry tree (12 inches diameter).....	298	59	30	9.41 meters.

HARRISON.

General locality.—Western shore of upper Harris Creek about $\frac{3}{4}$ mile north-northwest of town of Bozman. (See Chart No. 34.)

Immediate locality.—Observed station is in edge of marsh in northeast corner of old apple orchard about 2 feet above high water, 11 yards northwest of shore, 23 yards west of extreme end of point, and 80 yards south-southeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Clump" (N $32^{\circ} 34'$ E).....	0	00	00	$\frac{3}{8}$ mile.
North chimney of Miller house.....	30	14	..	$\frac{1}{2}$ mile.
South chimney of house.....	51	15	..	$\frac{3}{4}$ mile.
North chimney of house.....	58	30	..	$\frac{3}{8}$ mile.
Chimney of house.....	107	57	..	$\frac{3}{8}$ mile.
Chimney of small house.....	120	55	..	$\frac{7}{8}$ mile.
North gable of barn.....	137	19	..	$\frac{3}{4}$ mile.
Nail in blaze in apple tree (8 inches diameter).....	173	47	20	9.24 meters.
Center of old gristmill burr partly embedded in ground and about 4 feet diameter.....	270	32	..	4.87 meters.
Northeast corner of Harrison house.....	301	51	..	80 yards.

CLUMP.

General locality.—Western shore of upper Harris Creek on a point about $\frac{3}{4}$ mile north of town of Bozman. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 2 feet above high water, 6 yards west of shore, and 15 yards east of fringe of locust trees and vines.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Lawn" (N 0° 56' W).....	0	00	00	1/4 mile.
South chimney of Harrison house.....	28	44	..	1 1/4 miles.
South gable of Harrison barn.....	31	41	..	1 1/4 miles.
South chimney of small house.....	97	09	..	3/4 mile.
South chimney of house.....	108	42	..	1 1/2 miles.
North chimney of house.....	150	09	..	3/8 mile.
North chimney of house.....	172	07	..	1/4 mile.
"Bozman M. E. Church spire".....	178	12	..	1 mile.
South chimney of Harrison lower house.....	221	48	..	1/4 mile.
Nail in blaze in hackberry tree (6 inches diameter).....	280	58	50	17.75 meters.

MILLER.

General locality.—Eastern shore of upper Harris Creek about 1 mile north of town of Bozman. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field about 15 feet above high water, 65 yards east of shore, and half way between a barn and a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Pink" (S 30° 58' W).....	0	00	00	3/8 mile.
East gable of barn.....	50	20	..	1 1/4 miles.
Left corner of Seth bathhouse.....	92	44	..	3/8 mile.
South chimney of house.....	106	48	..	1 1/2 miles.
Southwest corner of Miller barn.....	151	31	..	25.28 meters.
West gable of barn.....	245	51	..	3/4 mile.
South chimney of Harrison house.....	270	45	..	1/4 mile.
Northwest corner of Miller house.....	327	46	..	29.23 meters.
West chimney of house.....	333	51	..	1 mile.

PINK:

General locality.—Eastern shore of upper Harris Creek about 3/8 mile north of town of Bozman. (See Chart No. 34.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 6 yards southwest of shore, 12 yards southeast of extreme end of point, and 200 yards southwest of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Miller" (N 30° 57' E).....	0	00	00	3/8 mile.
North chimney of Miller house.....	1	44	..	3/8 mile.
Nail in blaze in twin oak tree (18 inches diameter).....	54	42	..	9.63 meters.
North chimney of Bridges house.....	191	10	..	1 mile.
East gable of barn.....	271	02	..	3/4 mile.
South chimney of house.....	280	19	..	1 mile.
Cupola on tin-roof barn.....	319	36	..	1 3/4 miles.
South gable of house.....	335	51	..	2 1/2 miles.
South chimney of Harrison house.....	342	23	..	1 1/4 miles.

BOZMAN.

General locality.—Eastern shore of Harris Creek, about $\frac{1}{4}$ mile northwest of town of Bozman and $\frac{3}{4}$ mile east of entrance to Cummings Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in a cleared space about 8 feet above high water, 25 feet southeast of top of vertical bank 8 feet high, and 16 yards north of pine woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Koot" (S $71^{\circ} 40'$ W).....	0	00	00	$\frac{1}{2}$ mile.
South chimney of house.....	74	22	..	1 mile.
South chimney of house.....	77	10	..	$1\frac{3}{8}$ miles.
North chimney of Harrison house.....	93	19	..	$\frac{1}{2}$ mile.
Cupola on tin-roof barn.....	106	41	..	2 miles.
Chimney of house.....	145	31	..	$\frac{1}{4}$ mile.
South chimney of house.....	176	17	..	$\frac{1}{4}$ mile.
Nail in blaze in locust tree (4 inches diameter).....	225	41	30	24.93 meters.
Nail in blaze in pine tree (12 inches diameter).....	238	40	10	22.47 meters.
North chimney of Bridges house.....	347	31	..	1 mile.

BOZMAN M. E. CHURCH SPIRE.

General locality.—Southeastern shore of Harris Creek in the town of Bozman, on the northwest side of county road leading to Neavitt. (See Chart No. 34.)

Immediate locality.—Observed station is on edifice known as Bozman M. E. Church.

Marks.—Observed station is center of spire on Bozman M. E. Church.

References.—None necessary.

KOOT.

General locality.—Southeastern shore of Harris Creek on a point of land between two coves, about $\frac{3}{4}$ mile southeast of entrance to Cummings Creek, and $\frac{1}{2}$ mile west of town of Bozman. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field about 6 feet above high water, 10 yards south of shore, 6 yards south of edge of bank 6 feet high, and 200 yards north of a graveyard.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Fox" (S $71^{\circ} 28'$ W).....	0	00	00	$\frac{1}{4}$ mile.
Nail in blaze in oak tree (6 inches diameter).....	34	03	..	7.86 meters.
North chimney of house.....	68	34	..	$1\frac{1}{4}$ miles.
South gable of old barn.....	86	28	..	$\frac{1}{4}$ mile.
South chimney of Miller house.....	150	42	..	$1\frac{1}{8}$ miles.
Chimney of small house.....	161	30	..	$\frac{3}{4}$ mile.
West chimney of house.....	178	14	..	1 mile.
Chimney of small house.....	193	32	..	1 mile.
Flagstaff on Bozman Hall.....	214	42	..	$\frac{1}{2}$ mile.
Lone cherry tree in Bridges graveyard.....	282	30	..	200 yards.
North chimney of Bridges house.....	307	06	..	300 yards.
Nail in blaze in locust tree (6 inches diameter).....	347	25	50	15.29 meters.

FOX.

General locality.—Southeastern shore of Harris Creek on a point of land between two coves about $\frac{1}{4}$ mile south of entrance to Cummings Creek, and $\frac{1}{2}$ mile northeast of Little Neck Point. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, and 26 yards south of the extreme north end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	'	"	
"Koot" (N $71^{\circ}28'$ E).....	0	00	00	 $\frac{3}{8}$ mile.
North chimney of Bridges kitchen.....	26	46	..	 $\frac{1}{4}$ mile.
North chimney of house.....	150	04	..	 $\frac{3}{4}$ mile.
East gable of McQuay oyster house.....	175	43	..	 $\frac{1}{2}$ mile.
Smoke stack at Sherwood.....	181	13	..	 $2\frac{1}{4}$ miles.
East gable of barn.....	217	41	..	 1 mile.
North chimney of house.....	234	01	..	 $1\frac{1}{4}$ miles.
South chimney of house.....	265	55	..	 1 mile.
South chimney of house.....	289	43	..	 $1\frac{3}{8}$ miles.
North chimney of old house.....	321	09	..	 $1\frac{3}{8}$ miles.
Chimney of small house.....	347	12	..	 $1\frac{1}{4}$ miles.
North chimney of house.....	358	58	..	 1 mile.

NELSON 3.

General locality.—Northern shore of Choptank River on Nelson Island, between the entrances to Harris and Broad Creeks. (See Chart No. 34.)

Immediate locality.—Observed station is on southwest point of island on marsh about 2 feet above high water, 28 yards north-northeast of extreme end of point, 45 yards northwest of edge of marsh, and 14 yards east of marsh. Cement monument marking reference station is 32.27 meters N $32^{\circ}05'$ E of observed station.

Marks.—Observed station is center of nail in 3-inch square stub in tile pipe flush with ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	o	'	"	
"Choptank River Light" (S $56^{\circ}09'$ E).....	0	00	00	 $5\frac{1}{2}$ miles.
"Large Water Tank".....	10	09	50	 $7\frac{1}{2}$ miles.
Right chimney of house.....	31	48	..	 7 miles.
Near chimney outside of house.....	45	44	..	 $5\frac{3}{4}$ miles.
Near peak of barn on Cook Point.....	67	40	..	 $5\frac{1}{4}$ miles.
Left peak of hotel on Sharps Island.....	98	03	..	 $7\frac{5}{8}$ miles.
"Sharps Island Light".....	109	04	20	 $7\frac{1}{8}$ miles.
Chimney of house.....	137	36	..	 4 miles.
Stack of cannery at Tilghman Island.....	153	43	..	 $3\frac{1}{2}$ miles.
Windmill at Tilghman Island.....	155	12	..	 $3\frac{1}{2}$ miles.
Chimney of house on Change Point.....	185	37	..	 $1\frac{3}{4}$ miles.
Left peak of house.....	197	50	..	 $1\frac{1}{2}$ miles.
Chimney of house.....	254	10	..	 $2\frac{5}{8}$ miles.
"St. Michaels Church Spire".....	259	55	10	 6 $\frac{1}{4}$ miles.
REFERENCE STATION.....	268	13	20	 32.27 meters.
Left peak of building.....	293	43	..	 $2\frac{1}{8}$ miles.
Near peak of house with three chimneys.....	335	18	..	 3 miles.

ANNETTE.

General locality.—Western shore of Broad Creek about $\frac{3}{4}$ mile north of Nelson Point, and on south side of entrance to Balls Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, and 4 yards west of shore. Cement monument marking reference station is 9.39 meters N $75^{\circ} 59'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 3 inches above surface of ground.

References.—

	°	'	"	
"Myrtle" (N $15^{\circ} 29'$ E).....	0	00	00	 $\frac{5}{8}$ mile.
South chimney of house.....	18	39	..	 $3\frac{5}{8}$ miles.
South chimney of house.....	29	53	..	 $3\frac{3}{4}$ miles.
South gable of barn.....	35	01	..	 $3\frac{1}{4}$ miles.
Chimney of house.....	36	35	..	 $3\frac{1}{2}$ miles.
South gable of barn.....	72	54	..	 2 miles.
West chimney of house.....	102	19	..	 $3\frac{3}{8}$ miles.
"Choptank River Light".....	116	34	40	 $6\frac{1}{4}$ miles.
Water tank at Castle Haven.....	123	54	..	 $8\frac{1}{4}$ miles.
North gable of barn on Todd Point.....	148	31	..	 $6\frac{1}{2}$ miles.
Nail in blaze in cedar tree (10 inches diameter).....	187	26	00	 11.37 meters.
Nail in blaze in cedar tree (10 inches diameter).....	235	06	30	 16.81 meters.
REFERENCE STATION.....	268	29	40	 9.39 meters.

MYRTLE.

General locality.—Western shore of Broad Creek about $1\frac{1}{4}$ miles north of Nelson Point and $\frac{1}{4}$ mile north of Balls Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water and 4 yards northwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Annette" (S $15^{\circ} 29'$ W).....	0	00	00	 $\frac{5}{8}$ mile.
East gable of house.....	18	33	..	 $\frac{5}{8}$ mile.
Nail in blaze in pine tree (4 inches diameter).....	99	49	00	 11.51 meters.
Nail in blaze in locust tree (4 inches diameter).....	169	57	..	 5.09 meters.
South chimney of house.....	215	04	..	 $3\frac{3}{4}$ miles.
Chimney of house.....	225	21	..	 $3\frac{1}{8}$ miles.
Chimney of house.....	241	26	..	 2 miles.
West gable on barn.....	255	40	..	 $2\frac{1}{8}$ miles.
North chimney of house.....	268	45	..	 $2\frac{1}{2}$ miles.
Largest tree on Royston Island.....	300	41	..	 $2\frac{1}{8}$ miles.
Water tank at Castle Haven.....	307	09	..	 $8\frac{1}{4}$ miles.

COAL.

General locality.—Western shore of Broad Creek about 2 miles north of Nelson Point and 1 mile west of Deep Neck Point. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field about 4 feet above high water, 12 yards northwest of shore, 4 yards north of small lone cedar tree, and 200 yards north of pine woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Myrtle" (S 44° 23' W).....	0	00	00	¾ mile.
South gable of Bridges barn.....	136	22	..	¾ mile.
South chimney of Bridges house.....	152	03	..	¾ mile.
North chimney of house.....	167	18	..	1½ miles.
South chimney of house.....	170	31	..	2¼ miles.
Chimney of small house.....	203	48	..	2¾ miles.
Chimney of small house.....	209	52	..	2¾ miles.
Chimney of small house.....	272	47	..	1½ miles.
Largest tree on Royston Island.....	288	22	..	3 miles.
Left tangent of Nelson Island.....	331	41	..	2¾ miles.

TOBE.

General locality.—Western shore of Broad Creek on point at southern side of entrance to Leadenham Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in edge of cultivated field about 2 feet above high water, 19 yards south of shore, and back of a fringe of myrtle bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ross" (S 68° 15' E).....	0	00	00	1¾ miles.
North edge of house.....	6	29	..	1¾ miles.
South chimney of Bridges house.....	43	44	..	¾ mile.
North gable of Bridges barn.....	52	02	..	¾ mile.
East chimney of house.....	179	12	..	½ mile.
South chimney of old deserted house.....	264	38	..	¾ mile.
Cupola on "Beverly" house.....	297	12	..	2½ miles.
North chimney of house.....	342	28	..	3 miles.

WIRE.

General locality.—Southern shore of Leadenham Creek about 1 mile southwest of Mulberry Point, and ¼ mile southwest of Broad Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field about 5 feet above high water, 4 yards southeast of shore at top of a vertical bank 5 feet high, and 125 yards west of board fence and row of cedar trees. Cement monument marking reference station is 18.90 meters S 23° 36' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Tobe" (N 64° 26' E).....	0	00	00	¾ mile.
South chimney of Bridges house.....	55	31	..	¾ mile.
REFERENCE STATION.....	91	58	00	18.90 meters.
North gable of barn.....	160	41	..	½ mile.
Chimney of house.....	238	19	..	¾ mile.
North chimae of Fairbank house.....	249	09	..	¾ mile.
South chimney of house.....	256	04	..	1 mile.
South chimney of house.....	320	50	..	1 mile.
Chimney of small cabin.....	343	22	..	¾ mile.

BLANCO.

General locality.—Southern shore of Leadenham Creek about $\frac{3}{4}$ mile west of Broad Creek entrance to creek and $\frac{3}{4}$ mile southwest of entrance to Grace Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in a cultivated field about 9 feet above high water and 13 yards south of edge of vertical bank at shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Fairbanks" (N 30° 58' E).....	0	00	00	 $\frac{3}{4}$ mile.
West chimney of house.....	28	00	..	 $1\frac{1}{4}$ miles.
West gable of house.....	37	03	..	 3 miles.
North gable of barn.....	136	49	..	 $\frac{1}{4}$ mile.
South chimney of house.....	308	51	..	 $\frac{1}{2}$ mile.
East chimney of house.....	322	07	..	 $\frac{3}{4}$ mile.
Chimney of house.....	328	19	..	 $\frac{3}{4}$ mile.
West chimney of house.....	356	26	..	 $\frac{3}{8}$ mile.

NED.

General locality.—Southern shore of Leadenham Creek about $1\frac{1}{8}$ miles west of Broad Creek entrance to creek and opposite entrance to Caulk Cove. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 5 yards east of shore, 19 yards south of the extreme end of marsh point, and north of a heavy pine woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Caulk" (N 53° 48' E).....	0	00	00	 $\frac{1}{4}$ mile.
West chimney of house.....	15	23	..	 $\frac{3}{8}$ mile.
Nail in blaze in pine tree (12 inches diameter). 123	06	50	00	 10.47 meters.
Nail in blaze in pine tree (12 inches diameter). 177	59	10	00	 7.52 meters.
East chimney of house.....	226	43	..	 $\frac{3}{8}$ mile.
Chimney of small house.....	262	10	..	 $\frac{1}{2}$ mile.
East chimney of house.....	286	20	..	 $\frac{3}{4}$ mile.

CAULK.

General locality.—Northern shore of Leadenham Creek about $\frac{3}{4}$ mile west of Broad Creek entrance to creek and $\frac{1}{4}$ mile east-southeast of entrance to Caulk Cove. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh on a wooded shore about 1 foot above high water and 3 yards north of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Fairbanks" (N 84° 28' E).....	0	00	00	 $\frac{3}{4}$ mile.
North gable of Bridges barn.....	28	28	..	 1 mile.
West chimney of house.....	125	30	..	 $1\frac{1}{8}$ miles.
East chimney of house.....	172	52	..	 $\frac{3}{8}$ mile.
Nail in blaze in pine tree (5 inches diameter). 216	17	00	00	 9.74 meters.
Nail in blaze in pine tree (6 inches diameter). 339	45	20	00	 24.77 meters.
West chimney of house.....	356	03	..	 $\frac{3}{8}$ mile.

FAIRBANKS.

General locality.—Northern shore of Leadenham Creek about $\frac{1}{2}$ mile west of Broad Creek entrance to creek and on first point southwest of entrance to Grace Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 75 yards south of a house and 13 yards north of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is cement of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Pine" (N 50° 00' E).....	0	00	00	 $\frac{3}{8}$ mile.
South corner of small house.....	33	48	..	 3 miles.
West gable of Bridges barn.....	80	22	..	 $\frac{3}{4}$ mile.
West chimney of house.....	138	27	..	 $\frac{1}{2}$ mile.
South gable of corn crib.....	257	04	..	 100 yards.
East chimney of house.....	300	34	..	 75 yards.
South gable of barn.....	317	19	..	 300 yards.

PINE.

General locality.—Northern shore of Leadenham Creek on point between entrances to Leadenham Creek and Grace Creek, and about $\frac{1}{2}$ mile west of Broad Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on wooded shore about 5 feet above high water, 5 yards west of shore, 60 yards north of the extreme end of point, and at intersection of two lanes cut through woods. Cement monument marking reference station is 9.52 meters N 67° 25' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fairbanks" (S 50° 00' W).....	0	00	00	 $\frac{3}{8}$ mile.
REFERENCE STATION.....	52	35	00	 9.52 meters.
"Cabin" (staff on west end of cabin).....	161	49	00	 $\frac{5}{8}$ mile.
West chimney of house.....	207	11	..	 $\frac{5}{8}$ mile.
North chimney of house.....	219	50	..	 $2\frac{3}{8}$ miles.
South gable of small house.....	235	06	..	 $3\frac{3}{4}$ miles.
South gable of house.....	274	20	..	 $2\frac{1}{8}$ miles.
South chimney of Bridges house.....	284	24	..	 $\frac{3}{4}$ mile.
North gable of Bridges barn.....	290	34	..	 $\frac{3}{4}$ mile.
East chimney of house.....	336	13	..	 $\frac{3}{4}$ mile.

LUNA.

General locality.—Western shore of Grace Creek on a prominent point about $\frac{1}{2}$ mile northwest of Broad Creek entrance to creek. (See Chart No. 34.)

Immediate locality.—Observed station is about 5 feet above high water, 5 yards north of shore, 11 yards west of the extreme end of point, and 3 yards east of a dense growth of small pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cabin" (N 80° 51' E).....	0	00	00	 $\frac{1}{4}$ mile.
North chimney of house.....	19	07	..	 $\frac{3}{8}$ mile.
South gable of barn.....	37	30	..	 $\frac{3}{8}$ mile.
North gable of Bridges barn.....	92	10	..	 1 mile.
Nail in blaze in pine tree (5 inches diameter). ..	188	48	10	 3.29 meters.
Nail in blaze in pine tree (5 inches diameter). ..	256	00	00	 2.61 meters.
West chimney of house.....	287	57	..	 $\frac{1}{4}$ mile.

CABIN.

General locality.—Eastern shore of Grace Creek about $\frac{1}{2}$ mile north of Broad Creek entrance to creek. (See Chart No. 34.)

Immediate locality.—Observed station is on west gable of deserted cabin about 10 feet above high water, and 17 yards east of shore.

Marks.—Observed station is a twenty-penny wire nail driven 2 feet below the peak of west gable of a deserted cabin, and surmounted by a staff erected over nail.

References.—None necessary.

SKINNER.

General locality.—Western shore of Broad Creek at eastern side of entrance to Grace Creek, about $\frac{3}{4}$ mile west of Mulberry Point. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 3 yards north-east of shore, 42 yards east of the extreme end of point, and 40 yards southwest of a small clump of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ross" (S 45° 32' E).....	0	00	00	1 $\frac{1}{4}$ miles.
South chimney of house.....	5	48	..	2 $\frac{1}{4}$ miles.
North gable of house.....	21	10	..	2 $\frac{1}{4}$ miles.
West chimney of Bridges house.....	45	46	..	$\frac{3}{4}$ mile.
North gable of Bridges barn.....	51	32	..	$\frac{3}{4}$ mile.
East chimney of house.....	108	33	..	$\frac{3}{4}$ mile.
North chimney of house.....	103	55	..	$\frac{1}{2}$ mile.
South chimney of house.....	212	06	..	$\frac{3}{4}$ mile.
Chimney of cabin.....	228	36	..	$\frac{1}{2}$ mile.
South gable of barn.....	272	26	..	$\frac{1}{4}$ mile.
West chimney of house.....	318	07	..	2 miles

BALD.

General locality.—Western shore of Broad Creek on Mulberry Point on northern side of entrance to Leadensham Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 2 yards north of shore, 50 yards west of extreme east end of point, and 40 yards southeast of a rail fence. Cement monument marking reference station is 16.84 meters N 40° 26' W of observed station. Cedar stub marking old triangulation station "Mulberry" is 22.46 meters N 52° 57' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Old triangulation station "Mulberry" is nail in 2-inch cedar stub projecting 2 inches above surface of ground.

References.—

	°	'	"	
"Tobe" (S 57° 09' W).....	0	00	00	$\frac{7}{8}$ mile.
East gable of house.....	19	19	..	1 $\frac{1}{4}$ miles.
East chimney of house.....	47	05	..	$\frac{1}{4}$ mile.
REFERENCE STATION.....	118	25	00	16.84 meters.
South chimney of Willey house.....	158	43	..	1 $\frac{1}{2}$ miles.
Cupola on "Beverly" house.....	166	28	..	1 $\frac{1}{4}$ miles.
OLD TRIANGULATION STATION MULBERRY.....	175	48	40	22.46 meters.
Right tangent of north end of Willey Island.....	215	38	..	$\frac{3}{4}$ mile.
Right tangent of marsh at Deep Neck Point.....	286	05	..	1 $\frac{1}{8}$ miles.
North gable of Bridges barn.....	344	46	..	1 mile.

ROSE.

General locality.—Western shore of upper Broad Creek on a very prominent point about $\frac{3}{8}$ mile north-northeast of Mulberry Point and $\frac{5}{8}$ mile west-northwest of the south end of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 2 feet above high water, 4 yards west of end of point, and 20 yards east of point of pine woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Gram" (N 5° 29' W).....	0	00	00	 $\frac{1}{2}$ mile.
South chimney of house.....	4	32	..	 $1\frac{1}{4}$ miles.
South chimney of Willis house.....	42	53	..	 $\frac{3}{4}$ mile.
Cupola on "Beverly" house.....	53	03	..	 1 mile.
West chimney of "Beverly" tenant house....	66	59	..	 $1\frac{1}{2}$ miles.
West gable of house.....	111	08	..	 $1\frac{3}{8}$ miles.
North chimney of house.....	136	32	..	 $2\frac{1}{2}$ miles.
Right tangent of woods on Deep Neck Point..	179	32	..	 $1\frac{1}{8}$ miles.
Left tangent of Nelson Island.....	208	24	..	 $3\frac{3}{4}$ miles.
West gable on Bridges barn.....	225	04	..	 $1\frac{3}{8}$ miles.
South chimney of house.....	232	29	..	 $\frac{3}{8}$ mile.
North chimney of house.....	259	06	..	 $\frac{3}{8}$ mile.
Cupola on barn.....	359	21	..	 $1\frac{1}{4}$ miles.

GRAM.

General locality.—Western shore of upper Broad Creek about $\frac{3}{4}$ mile north of Mulberry Point and about $\frac{1}{2}$ mile west of upper end of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 2 feet above high water, 10 yards west of extreme east end of point, and about $\frac{1}{4}$ mile northeast of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Royal" (N 8° 49' E).....	0	00	00	 $\frac{3}{8}$ mile.
North chimney of house.....	12	31	..	 $\frac{5}{8}$ mile.
North chimney of Price house.....	41	36	..	 $\frac{3}{4}$ mile.
South chimney of Willey house.....	63	08	..	 $\frac{1}{2}$ mile.
Cupola on "Beverly" house.....	66	45	..	 $\frac{3}{4}$ mile.
West chimney of house.....	96	11	..	 $1\frac{1}{8}$ miles.
Right tangent of woods on Deep Neck Point..	165	22	..	 $1\frac{3}{8}$ miles.
North chimney of house.....	231	02	..	 $\frac{1}{4}$ mile.
South gable of Miller barn.....	313	28	..	 2 miles.
South chimney of Harrison house.....	316	54	..	 $1\frac{1}{8}$ miles.
Cupola on barn.....	344	46	..	 $\frac{3}{4}$ mile.
South chimney of house.....	353	26	..	 $\frac{3}{4}$ mile.

BENGAL.

General locality.—Western shore of upper Broad Creek about $\frac{3}{4}$ mile west of north end of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on narrow marsh point about 1 foot above high water, 4 yards south of shore, 55 yards west of extreme end of point, and north of a fringe of pine and cedar trees along bank. Cement monument marking reference station is 8.81 meters S 52° 34' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Gram" (S 51° 52' E).....	0	00	00	1½ mile.
Nail in blaze in pine tree (18 inches diameter).....	96	33	50	11.68 meters.
REFERENCE STATION.....	104	26	10	8.81 meters.
Nail in blaze in cedar stump 1 foot high (10 inches diameter).....	109	01	00	9.43 meters.
East chimney of Jump house.....	169	00	..	½ mile.
Belfry on Harrison outhouse.....	201	55	..	1½ miles.
South chimney of Harper house.....	216	54	..	¾ mile.
Cupola on barn.....	251	54	..	½ mile.
South chimney of house.....	266	18	..	¾ mile.
"St. Michaels Water Tank".....	268	51	..	2 miles.
North chimney of house.....	293	15	..	⅝ mile.
Cupola on "Beverly" house.....	326	00	..	1¼ miles.
North chimney of house.....	343	15	..	1½ miles.

EASTMAN.

General locality.—Western shore of upper Broad Creek about 1¼ miles west-northwest of north end of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 2 feet above high water, 12 yards south of extreme end of point, 3 yards northeast of clump of myrtle bushes, and 200 yards east of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Woodill" (N 23° 46' W).....	0	00	00	¾ mile.
Belfry on Harrison outhouse.....	4	06	..	1 mile.
South gable of barn.....	12	36	..	2 miles.
South chimney of Willis house.....	18	31	..	1¼ miles.
Chimney of Burke house.....	22	59	..	¾ mile.
North chimney of Harper house.....	38	29	..	½ mile.
North chimney of house.....	82	43	..	1 mile.
North chimney of house.....	124	09	..	1½ miles.
Chimney of Sutton house.....	297	13	..	200 yards.
East chimney of Jump house.....	327	23	..	½ mile.

WOODILL.

General locality.—Western shore of upper Broad Creek about ¾ mile east of Bozman and 1½ miles northwest of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on wooded shore about 6 feet above high water, 8 yards southwest of shore, and 5 yards north of a pile of oyster shells.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mars" (S 77° 03' E).....	0	00	00	¾ mile.
South chimney of house.....	8	38	..	2½ miles.
Nail in blaze in pine tree (12 inches diameter).....	104	16	20	23.70 meters.
Nail in blaze in pine tree (12 inches diameter).....	166	31	20	16.21 meters.
Belfry on Harrison outhouse.....	238	54	..	⅞ mile.
South chimney of house.....	251	54	..	2 miles.

References—Continued.

	°	'	"	
South chimney of Willis house.....	258	51	..	¾ mile.
Chimney of Burke house.....	272	07	..	½ mile.
North chimney of Harper house.....	305	59	..	¾ mile.
Cupola on barn.....	327	48	..	¾ mile.
North chimney of house.....	350	00	..	1 mile.

DELTA.

General locality.—Western shore of upper Broad Creek about ¾ mile northeast of Bozman, and 1¾ miles northwest of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 10 yards west of shore, and about 100 yards east of an orchard.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Willis" (N 13° 54' E).....	0	00	00	.. ½ mile.
North chimney of Harper house.....	92	01	..	½ mile.
Cupola on "Beverly" house.....	103	01	..	2½ miles.
North chimney of house.....	109	34	..	2¼ miles.
North chimney of Jump house.....	209	09	..	¼ mile.
South gable of barn.....	341	14	..	1 mile.

MARION.

General locality.—Western shore of upper Broad Creek about 2½ miles northwest of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on east side of a tenant house in a cultivated field about 8 feet above high water, 12 yards south of shore, and 12 yards northwest of old open well.

Marks.—Observed station is center of hole drilled in east face of center one of three posts supporting east front of a tenant house, and surmounted by spindle erected over hole.

References.—None necessary.

WILLIS.

General locality.—Eastern shore of upper Broad Creek, on a point at northern side of entrance to a small creek about 2½ miles west of St. Michaels. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point at west edge of yard of a house about 1 foot above high water, 8 yards east of shore, 5 yards west of top of slope, about 4 feet higher than station, and 65 yards southwest of the southwest corner of a house.

Marks.—Observed station is center of 2-inch tile pipe projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe.

References.—

	°	'	"	
"Neptune" (S 15° 36' E).....	0	00	00	.. ¾ mile.
North chimney of house.....	37	51	..	½ mile.
North gable of house.....	41	18	..	½ mile.
"Marion" (staff on east side of house).....	70	53	10	.. ¾ mile.
Chimney on Harrison tenant house.....	70	55	..	¾ mile.
South chimney of Harrison house.....	113	36	..	¾ mile.
South chimney of Miller house.....	125	01	..	¾ mile.
South chimney of Harrison house.....	165	07	..	1¼ miles.
Nail in blaze in cedar tree (15 inches diameter).....	174	34	50	.. 16.59 meters.
South chimney of house.....	182	18	..	½ mile.
Southwest corner of Willis house.....	246	43	..	63 yards.
Nail in blaze in cedar tree (5 inches diameter).....	302	55	50	.. 11.81 meters.
Chimney of house.....	356	35	..	¾ mile.

NEPTUNE.

General locality.—Eastern shore of upper Broad Creek about 2 miles north of Mulberry Point and 2 miles west of St. Michaels. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated garden about 7 feet above high water, 10 yards north of shore, 20 yards east of the extreme end of point, 2 yards north of top of bank with uniform slope to shore, and 40 yards west of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Venus" (S 17° 02' E)	0	00	00	1/8 mile.
North chimney of house	72	41	..	1/2 mile.
Nail in blaze in locust tree (5 inches diameter)	101	55	00	8.67 meters.
Chimney of Harrison tenant house	141	01	..	3/8 mile.
Belfry on Harrison outhouse	153	54	..	3/8 mile.
South gable of house	171	23	..	1 1/4 miles.
West chimney of Willis house	186	57	..	3/8 mile.
North chimney of house	222	44	..	2 miles.
Chimney of Burke house	287	38	..	40 yards.

VENUS.

General locality.—Eastern shore of upper Broad Creek about 1/2 mile north of entrance to Edgar Cove. (See Chart No. 34.)

Immediate locality.—Observed station is on wooded point about 6 feet above high water and 3 yards northeast of edge of a vertical bank 6 feet high. Cement monument marking reference station is 13.28 meters S 79° 28' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Delta" (N 83° 41' W)	0	00	00	1/4 mile.
South chimney of Miller house	38	50	..	1 mile.
Belfry on Harrison outhouse	45	34	..	3/4 mile.
South gable of barn	55	58	..	1 1/4 miles.
Chimney of Burke house	77	11	..	1/8 mile.
Nail in blaze of twin oak tree (24 inches diameter)	136	06	10	14.17 meters.
REFERENCE STATION	184	13	25	13.28 meters.
Nail in blaze of oak tree (5 inches diameter) ..	195	36	50	3.48 meters.
West gable of Sutton barn	289	11	..	3/4 mile.
South chimney of house	336	36	..	1/2 mile.

MARS.

General locality.—Eastern shore of upper Broad Creek about 1 mile northwest of north end of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 2 feet above high water and 7 yards east of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

Survey of Oyster Bars, Talbot County, Md.

References.—

	°	'	"	
"Royal" (S 69° 17' E).....	0	00	00	½ mile.
North chimney of house.....	3	51	..	1 mile.
North gable of cornerib.....	105	52	..	½ mile.
West chimney of Sutton house.....	136	00	..	½ mile.
Right corner of Eastman bungalow.....	147	10	..	¾ mile.
South chimney of house.....	183	24	..	¾ mile.
Chimney of Harrison tenant house.....	210	33	..	1 mile.
South chimney of house.....	232	05	..	¾ mile.
North chimney of house.....	333	35	..	½ mile.

ROYAL.

General locality.—Eastern shore of upper Broad Creek about ½ mile northwest of north end of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 5 yards northeast of shore, 45 yards south of a lone leaning cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mars" (N 69° 16' W).....	0	00	00	½ mile.
North chimney of house.....	1	57	..	1¼ miles.
Nail in blaze in red oak tree (3 feet diameter).....	92	31	00	76.08 meters.
West chimney of house.....	113	59	..	¾ mile.
South chimney of "Beverly" house.....	178	12	..	1 mile.
Right tangent of woods on Deep Neck Point.....	247	53	..	2 miles.
North chimney of house.....	273	53	..	¾ mile.
North chimney of Sutton house.....	338	34	..	1 mile.
West chimney of Jump house.....	348	18	..	1 mile.

GRAVE.

General locality.—Eastern shore of upper Broad Creek on point of mainland between Broad Creek and Back Creek about ¼ mile west of north end of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 2 feet above high water, 11 yards northeast of shore, and about ¼ mile southwest of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ray" (S 26° 29' E).....	0	00	00	½ mile.
Right tangent of woods Deep Neck Point.....	31	14	..	1¾ miles.
North chimney of house.....	83	25	..	¾ mile.
South gable of barn.....	123	20	..	1¼ miles.
North chimney of Jump house.....	132	30	..	1¾ miles.
South chimney of house.....	172	29	..	¾ mile.
South chimney of Price house.....	249	57	..	¼ mile.
Cupola on "Beverly" house.....	300	07	..	¾ mile.
North chimney of Willey house.....	309	23	..	¾ mile.

RAY.

General locality.—Eastern shore of Broad Creek on western side of Hambleton Island about ½ mile north of the south end of island, and ¼ mile northeast of Mulberry Point. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 4 yards east of shore, and 13 yards west of fringe of small trees at top of bank near edge of cultivated field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of marsh. Subsurface mark is center of a 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Willey" (S 7° 15' E).....	0	00	00	3/8 mile.
Right tangent of woods Deep Neck Point....	23	27	..	1 3/8 miles.
West gable of Bridges barn.....	55	34	..	2 miles.
East chimney of house.....	73	30	..	1 mile.
North chimney of house.....	109	33	..	3/4 mile.
North chimney of house.....	126	25	..	1 3/4 miles.
South chimney of house.....	159	58	..	1 1/4 miles.
Nail in blaze in cedar tree (6 inches diameter). 245	59	10	..	11.08 meters.
Nail in blaze in wild cherry tree (7 inches diameter).....	303	17	50	20.52 meters.

WILEY.

General locality.—Eastern shore of Broad Creek on southern end of Hambleton Island about 5/8 mile north of Cedar Point. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field about 15 feet above high water, and 50 yards north of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bald" (S 87° 48' W).....	0	00	00	3/4 mile.
North chimney of house.....	39	42	..	1 mile.
Chimney of house.....	57	22	..	2 miles.
South chimney of house.....	75	32	..	1 1/8 miles.
Chimney of "Beverly" tenant house.....	117	34	..	2/3 mile.
Cupola on outhouse.....	189	21	..	3/4 mile.
Chimney of house.....	194	37	..	1 1/2 miles.
West chimney of house.....	208	32	..	1 1/2 miles.
North gable of barn.....	230	19	..	2 1/2 miles.
Left tangent of Nelson Island.....	304	30	..	3 3/8 miles.
East chimney of house.....	353	02	..	1 7/8 miles.

JUDGE.

General locality.—Western shore of Back Creek on a prominent point on eastern side of Hambleton Island about 1/2 mile north of Edge Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 2 feet above high water, 7 yards west of the extreme end of point, and 8 yards east of a cut inshore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Willey" (S 14° 47' W).....	0	00	00	1/2 mile.
Lone cedar tree.....	51	09	..	95 yards.
South chimney of Willey house.....	136	07	..	1/2 mile.
North chimney of house.....	142	22	..	3/4 mile.
West chimney of "Beverly" house.....	164	37	..	1/2 mile.
East chimney of "Beverly" tenant house....	204	55	..	3/8 mile.
Chimney of house.....	238	00	..	1 1/2 mile.
East chimney of house.....	265	10	..	3/8 mile.
North chimney of house.....	299	54	..	3/4 mile.
Right edge of small house.....	328	18	..	3 miles.

THELMA.

General locality.—Western shore of Back Creek on northern part of Hambleton Island, about 1 mile north of Edge Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in front yard of a house about 6 feet above high water, 3 yards west of shore, 20 yards southeast of a house, and nearly on line with south side of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Elmore" (N 23° 18' E).....	0	00	00	 ¾ mile.
Chimney on oyster house.....	17	11	..	 1½ miles.
Cupola on "Beverly" house.....	59	33	..	 ¼ mile.
West chimney of house.....	105	48	..	 ¾ mile.
North chimney of house.....	225	57	..	 1¼ miles.
Nail in cherry tree (12 inches diameter).....	235	51	50	 14.47 meters.
Northeast corner of Willey house.....	296	30	30	 17.78 meters.
North chimney of house.....	324	01	..	 ¼ mile.
"St. Michaels P. E. Church spire".....	352	44	20	 1½ miles.

ELMORE.

General locality.—Western shore of Back Creek, about ¾ mile north of north end of Hambleton Island and 1¼ miles south of St. Michaels. (See Chart No. 34.)

Immediate locality.—Observed station is near edge of a cultivated field, about 6 feet above high water, 5 yards south of edge of vertical bank at shore, and 20 yards west of extreme end of point of marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Beverly" (N 29° 48' E).....	0	00	00	 ¼ mile.
Chimney of house.....	11	31	..	 1 mile.
Chimney of oyster house.....	20	30	..	 ¾ mile.
Chimney of house.....	27	51	..	 ½ mile.
Nail in blaze in cedar tree (12 inches diameter).....	118	21	20	 5.40 meters.
Cupola on "Beverly" house.....	136	42	..	 ¼ mile.
Nail in blaze in locust tree (5 inches diameter).....	155	41	50	 5.30 meters.
South chimney of Willey house.....	175	20	..	 ¾ mile.
North chimney of house.....	211	..	..	 ¼ mile.
"St. Michaels Water Tank".....	338	25	..	 1¾ miles.
"St. Michaels P. E. Church spire".....	344	08	30	 1¼ miles.

BEVERLY.

General locality.—Eastern shore of Back Creek, about ¾ mile south of St. Michaels, and 5½ mile north of north end of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on sandy marsh point about 1 foot above high water, 8 yards northeast of shore and south of a heavy growth of small pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ansley" (S 9° 09' E).....	0	00	00	¼ mile.
North chimney of "Beverly" house.....	15	53	..	¼ mile.
North chimney of Willey house.....	30	43	..	¾ mile.
North gable of barn.....	51	28	..	¾ mile.
East gable of house.....	110	02	..	1 mile.
Chimney of small deserted house.....	114	57	..	¾ mile.
Nail in root of cedar stump.....	154	50	..	1.56 meters.
Nail in blaze in cedar tree (10 inches diam- eter).....	243	21	20	5.65 meters.
Chimney of house.....	277	31	..	¾ mile.
North chimney of house.....	293	12	..	¾ mile.
Northeast peak of small outhouse.....	313	02	..	¾ mile.

SAMUEL.

General locality.—Eastern side of Back Creek on northern side of small creek, about 1 mile south of St. Michaels and ¾ mile northeast of north end of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is on point near edge of cultivated field, about 6 feet above high water, 15 yards north of shell covered shore, and 30 yards northwest of extreme end of marsh point, and near a number of small cedar and locust trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ansley" (S 20° 10' W).....	0	00	00	¼ mile.
West chimney of "Beverly" kitchen.....	0	48	..	¾ mile.
North chimney of Willey house.....	16	12	..	¾ mile.
North chimney of house.....	31	57	..	1 mile.
Nail in blaze in locust tree (5 inches diam- eter).....	99	48	20	6.47 meters.
Nail in blaze in cedar tree (12 inches diam- eter).....	188	22	00	13.64 meters.
Chimney of small house.....	215	22	..	¾ mile.
Chimney of oyster house.....	252	12	..	250 yards.
North chimney of house.....	276	00	..	¾ mile.
Chimney of old deserted house.....	317	21	..	¾ mile.

ANSLEY.

General locality.—Eastern shore of Back Creek, about 1 mile south of St. Michaels, ½ mile northeast of north end of Hambleton Island, and ½ mile south of entrance to a small creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 3 yards south of shore and in center of triangle formed by three pine stubs driven flush with marsh to support theodolite. Cement monument marking reference station is 21.25 meters N 71° 13' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Samuel" (N 20° 10' E).....	0	00	00	¼ mile.
Nail in blaze in pine tree (12 inches diam- eter).....	35	33	50	18.74 meters.
REFERENCE STATION.....	51	02	40	21.25 meters.
Nail in blaze in pine tree (18 inches diam- eter).....	66	12	00	12.72 meters.

References—Continued.

	°	'	"	
Cupola on "Beverly" house.....	179	34	..	1/4 mile.
North chimney of Willey house.....	205	52	..	1/2 mile.
North chimney of house.....	253	19	..	3/8 mile.
South gable of barn.....	323	55	..	5/8 mile.

HARPER.

General locality.—Eastern shore of Back Creek on a prominent point opposite north end of Hambleton Island about 1½ miles south of St. Michaels. (See Chart No. 34.)

Immediate locality.—Observed station is in the northwest corner of yard of a house about 4 feet above high water, 13 yards south of edge of a stone sea wall, and 55 yards northwest of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Judge" (S 3° 05' E).....	0	00	00	3/8 mile.
Left tangent of Nelson Point.....	34	24	..	4½ miles.
North chimney of Willey house.....	81	54	..	1/4 mile.
East chimney of house.....	115	40	..	2½ miles.
South chimney of house.....	128	25	..	1/4 mile.
South gable of barn.....	180	40	..	1¼ miles.
"St. Michaels Water Tank".....	188	28	..	1½ miles.
Nail in pecan tree (24 inches diameter).....	237	42	40	20.29 meters.
Northwest corner of "Beverly" kitchen.....	315	47	..	54 yards.
Nail in leaning locust tree.....	348	34	..	18.72 meters.

TAFT.

General locality.—Eastern shore of Back Creek about 2 miles south of St. Michaels, ½ mile north of Edge Creek, and nearly opposite extreme eastern point of Hambleton Island. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field about 7 feet above high water, 12 yards east of shore, 15 yards north of edge of a bank 6 feet above marsh, and 5 yards east of edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hopkins" (S 9° 00' E).....	0	00	00	3/8 mile.
Nail in blaze in cedar tree (10 inches diameter).....	34	26	00	13.43 meters.
South chimney of Willey house.....	144	19	..	5/8 mile.
North chimney of house.....	153	14	..	3/8 mile.
North chimney of "Beverly" house.....	164	54	..	1/2 mile.
East chimney of "Beverly" tenant house.....	190	23	..	3/8 mile.
Chimney of house.....	239	16	..	1/4 mile.
West chimney of Hopkins house.....	283	21	..	300 yards.
Nail in blaze in cedar tree (15 inches diameter).....	356	21	..	21.59 meters.

HOPKINS.

General locality.—Northern shore of Edge Creek on eastern side of entrance to Back Creek about ¾ mile north-northeast of Cedar Point. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field about 8 feet above high water, 15 yards north of shore, 20 yards from three small cedar trees near shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Spencer" (S 43° 22' E).....	0	00	00	¾ mile.
North gable of barn.....	25	30	..	2½ miles.
Right tangent of pine woods on Deep Neck Point.....	84	37	..	1¼ miles.
Left edge of barn roof.....	107	32	..	2 miles.
Chimney of house.....	137	23	..	1½ miles.
South chimney of house.....	195	15	..	1¼ miles.
West chimney of "Beverly" house.....	205	21	..	¾ mile.
West chimney of house.....	234	13	..	¾ mile.
Chimney of house.....	336	04	..	1 mile.
South chimney of house.....	343	28	..	¾ mile.

SPENCER.

General locality.—Northern shore of Edge Creek at western side of entrance to Solitude Creek about 1 mile east of Broad Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 4 yards north-east of shore, and 21 yards northwest of extreme end of point, with a long bar of oyster shells extending 65 yards into creek. Cement monument marking reference station is 11.22 meters N 8° 44' E of observed station.

Marks.—Observed station is nail in 3-inch cedar stub projecting 4 inches above surface of marsh. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Hopkins" (N 43° 22' W).....	0	00	00	¾ mile.
South gable of barn.....	36	01	..	¼ mile.
REFERENCE STATION.....	52	05	10	11.22 meters.
Chimney of house.....	96	18	..	¾ mile.
West chimney of house.....	110	51	..	¾ mile.
South chimney of house.....	180	45	..	1½ miles.
West chimney of house.....	201	47	..	1¼ miles.
Chimney of small house.....	243	19	..	1½ miles.
East chimney of house.....	306	49	..	2¼ miles.
East gable of house.....	316	57	..	2¾ miles.
South chimney of house.....	345	29	..	2 miles.

MARSHALL.

General locality.—Northern shore of Edge Creek opposite Elberts Cove about 1¼ miles east of Cedar Point at Broad Creek entrance to creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field about 6 feet above high water, 16 yards northeast of shore, 3 yards northeast of an old row of fence posts, 13 yards northwest of wire fence and line of cedar trees, and 125 yards west of an old deserted house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 7 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Holly" (S 13° 25' E).....	0	00	00	½ mile.
West chimney of house.....	21	00	..	¾ mile.
North gable of house.....	62	58	..	1 mile.
North gable of barn.....	75	45	..	1¼ miles.

Survey of Oyster Bars, Talbot County, Md.

References—Continued.

	°	'	"	
East chimney of house.....	120	35	..	2¼ miles.
Chimney of house.....	162	45	..	1½ miles.
East chimney of house.....	176	04	..	¾ mile.
Lone dead tree (18 inches diameter).....	206	48	..	125 yards.
West chimney of old deserted house.....	288	17	..	125 yards.
Nail in blaze in cedar tree (5 inches diameter). ..	214	43	10	12.55 meters.
West chimney of house.....	340	56	..	1½ miles.

CLARK.

General locality.—Northern shore of Edge Creek on western side of entrance to Spencer Creek about 1½ miles east of Cedar Point. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field behind a fringe of locust and cedar trees about 6 feet above high water, 17 yards north of shore, and 35 yards northwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Holly" (S 26° 12' W).....	0	00	00	¾ mile.
East chimney of house.....	12	39	..	¾ mile.
Nail in blaze in locust tree (7 inches diameter) ..	72	11	..	7.58 meters.
East chimney of deserted house.....	97	34	..	¼ mile.
South chimney of house.....	142	23	..	½ mile.
West gable of Hammond wharf house.....	180	40	..	¾ mile.
North chimney of house.....	216	23	..	¾ mile.
South gable of house.....	255	52	..	¾ mile.
North chimney of house.....	276	48	..	1 mile.
West chimney of house.....	295	05	..	¾ mile.
West chimney of house.....	314	52	..	¾ mile.
Nail in blaze in cedar tree (6 inches diameter). ..	323	03	40	3.67 meters.

HOLLY.

General locality.—Southern shore of Edge Creek about 2 miles east of Broad Creek and nearly opposite entrance to Spencer Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about on level with high water, 13 yards north of a fringe of cedar trees and 100 yards west of a cove. Cement monument marking reference station is 11.68 meters S 14° 24' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Marsh" (N 62° 58' W).....	0	00	00	¾ mile.
East gable of barn.....	3	14	..	2¾ miles.
South chimney of house.....	28	36	..	1¼ miles.
Chimney of small house.....	44	51	..	¾ mile.
Chimney of deserted house.....	54	38	..	½ mile.
Chimney of large house.....	125	00	..	¾ mile.
South chimney of house.....	162	29	..	1¼ miles.
Nail in blaze in holly tree (8 inches diameter). ..	256	50	40	12.88 meters.
REFERENCE STATION.....	257	21	50	11.68 meters.
Nail in blaze in tree (6 inches diameter).....	293	42	00	14.35 meters.
East chimney of house.....	303	31	..	¾ mile.

MARSH.

General locality.—Southern shore of Edge Creek at eastern side of entrance to Elbert Cove about $1\frac{1}{2}$ miles east of Broad Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 18 yards west of shore, 27 yards south of extreme north end of point, and 35 yards north of an old fence line with a row of cedars. Cement monument marking reference station is 13.58 meters S $14^{\circ} 47'$ W of observed station.

Marks.—Observed station is nail in 3-inch cedar stub projecting 5 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Clark" (N $66^{\circ} 24'$ E).....	0	00	00	$\frac{1}{2}$ mile.
Chimney of house.....	11	54	..	1 mile.
West gable of barn.....	19	43	..	$1\frac{1}{8}$ miles.
South chimney of house.....	37	31	..	$1\frac{1}{2}$ miles.
REFERENCE STATION.....	128	23	10	13.58 meters.
South chimney of house.....	195	10	..	1 mile.
East gable of barn.....	234	19	..	$2\frac{3}{4}$ miles.
South chimney of house.....	260	24	..	$2\frac{1}{2}$ miles.
East chimney of house.....	296	34	..	$\frac{3}{4}$ mile.

CEDAR.

General locality.—Eastern shore of Broad Creek on Cedar Point at southern side of entrance to Edge Creek about $\frac{3}{8}$ mile south of south end of Hambleton Island and $\frac{1}{2}$ mile east-northeast of Deep Neck Point. (See Chart No. 34.)

Immediate locality.—Observed station is on a hard oyster shell bank about 3 feet above high water, 3 yards south of shore, and in front of a thicket of cedar and oak trees. Cement monument marking reference station is 11.16 meters S $27^{\circ} 55'$ E of observed station.

Marks.—Observed station is nail in center of 2-inch cedar stub projecting 2 inches above surface of ground. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Willey" (N $4^{\circ} 24'$ W).....	0	00	00	$\frac{5}{8}$ mile.
"St. Michaels Water Tank".....	8	03	..	$3\frac{1}{4}$ miles.
West chimney on house.....	26	29	..	$1\frac{1}{8}$ miles.
Cupola on house.....	52	10	..	1 mile.
East chimney of house.....	54	03	..	$1\frac{1}{4}$ miles.
North chimney of house.....	79	29	..	$1\frac{1}{2}$ miles.
REFERENCE STATION.....	156	28	10	11.16 meters.
Nail in blaze in twin oak tree (12 inches diameter).....	168	20	00	6.14 meters.
Nail in blaze in elm tree (12 inches diameter).....	213	09	50	4.13 meters.
North chimney of house.....	270	59	..	$1\frac{3}{8}$ miles.
East gable of house.....	284	43	..	$1\frac{1}{2}$ miles.
East chimney of house.....	308	11	..	$1\frac{1}{4}$ miles.
East chimney of house.....	330	38	..	$1\frac{1}{8}$ miles.
South chimney of house.....	351	51	..	2 miles.

ROSS.

General locality.—Eastern shore of Broad Creek on Deep Neck Point about 1 mile south-southeast of Mulberry Point and $\frac{1}{2}$ mile west-southwest of Cedar Point. (See Chart No. 34.)

Immediate locality.—Observed station is on wooded shore about 10 feet above high water, and 6 yards southeast of top of vertical bank which is washing rapidly. Cement monument marking reference station is 14.94 meters S $61^{\circ} 43'$ E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below bottom of surface pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Cedar" (N 65° 14' E).....	0	00	00	1/2 mile.
Nail in blaze in pine tree (18 inches diameter)	22	11	30	16.32 meters.
REFERENCE STATION.....	53	03	10	14.94 meters.
Nail in blaze in pine tree (15 inches diameter)	81	02	20	11.81 meters.
Left tangent of Nelson Point.....	156	27	..	2 3/8 miles.
South gable of Bridges barn.....	212	06	..	1 mile.
South gable of house.....	226	21	..	1 1/2 miles.
South chimney of house.....	243	18	..	1 3/4 miles.
South chimney of house.....	263	21	..	1 mile.
Cupola on barn.....	288	25	..	2 1/2 miles.
"St. Michaels Water Tank".....	306	04	..	3 1/2 miles.
"St. Michaels P. E. Church Spire".....	308	18	..	3 3/8 miles.
East chimney of house.....	320	33	..	1 1/8 miles.

COOK.

General locality.—Eastern shore of Broad Creek about 1 3/4 miles north of Choptank River and 1/2 mile south of entrance to Bridge Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on point of marsh about 1 foot above high water and 2 yards east of shore. Cement monument marking reference station is 11.63 meters N 61° 29' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Ross" (N 4° 06' E).....	0	00	00	1 1/4 miles.
East chimney of house.....	11	56	..	1 1/4 miles.
Nail in blaze in cedar tree (6 inches diameter)	54	02	20	13.79 meters.
REFERENCE STATION.....	57	23	00	11.63 meters.
Nail in blaze in persimmon tree (8 inches diameter).....	73	37	30	9.79 meters.
Left tangent of Nelson Island.....	228	18	..	2 miles.
North gable of barn.....	293	09	..	2 1/4 miles.
South gable of Bridges barn.....	321	47	..	1 1/2 miles.
South chimney of house.....	343	04	..	2 3/8 miles.
South chimney of house.....	354	47	..	3 1/2 miles.

PEARY.

General locality.—Eastern shore of Broad Creek about 1 mile north of entrance to Broad Creek, 1 3/8 miles north of Royston Island, and 1 3/4 miles east-northeast of Nelson Point. (See Chart No. 34.)

Immediate locality.—Observed station is on wooded shore about 6 feet above high water, 3 yards east of vertical bank, which is washed by high water, 100 yards south of north end of pine woods. Cement monument marking reference station is 20.93 meters N 43° 30' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 3 inches above surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Roys" (S 17° 35' E).....	0	00	00	1½ miles.
Left tangent of Cook Point.....	44	53	..	6¼ miles.
Right tangent of Nelson Point.....	96	09	..	1¾ miles.
East chimney of house.....	117	03	..	2 miles.
East gable of Parlett house.....	131	52	..	2¾ miles.
South gable of barn.....	168	59	..	1¾ miles.
Nail in blaze in pine tree (15 inches diameter).....	233	25	40	17.49 meters.
REFERENCE STATION.....	241	04	50	20.93 meters.
Nail in blaze in pine tree (15 inches diameter).....	307	35	10	15.45 meters.

IRISH.

General locality.—Northeastern shore of Choptank River on west side of entrance to Irish Creek, about ¾ mile northeast of Royston Island. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land, about 5 feet above high water, 13 yards east-northeast of edge of bank, 5 yards north of foot of bank, 4 yards north of a cedar tree, 10 yards west of a small cedar tree at west end of line of locust trees, and 23 yards east-southeast of rounded point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Pont" (N 13° 04' E).....	0	00	00	½ mile.
Near peak of building.....	25	49	..	1¼ miles.
Nail in blaze in locust tree (2 inches diameter).....	68	52	50	16.33 meters.
Left peak of house.....	98	15	..	¾ mile.
Left peak of barn.....	123	13	..	1 mile.
Nail in blaze in cedar tree (7 inches diameter).....	152	52	10	4.29 meters.
Near peak of house.....	185	06	..	5 miles.
Nail in blaze in cedar tree (2 inches diameter).....	206	33	40	6.24 meters.
"Sharps Island Light".....	230	10	20	9 miles.
Near peak of house.....	291	12	..	3¾ miles.
Near peak of barn.....	348	54	..	300 yards.

ROYS.

General locality.—Northeastern side of Choptank River on southern end of Royston Island, about ½ mile southwest of entrance to Irish Creek. (See Chart No. 34.)

Immediate locality.—Observed station is about 5 feet above high water, 15 yards north of shore, 25 yards east of shore, and 25 yards northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 44° 37' E).....	0	00	00	3½ miles.
"Large Water Tank".....	9	09	00	5½ miles.
Peak of large barn.....	49	44	..	4¼ miles.
Right peak of barn.....	71	08	..	5¾ miles.
Windmill.....	71	16	..	5¾ miles.
"Sharps Island Light".....	109	16	30	8¾ miles.
Church spire.....	134	43	..	6 miles.

Survey of Oyster Bars, Talbot County, Md.

References—Continued.

	°	'	"	
Church spire.....	134	47	..	6 miles.
Large spire.....	134	57	..	6 miles.
Windmill.....	146	07	..	5¾ miles.
Chimney of house.....	170	03	..	3 miles.
Near peak of large barn.....	200	28	..	3½ miles.
Nail in blaze in oak tree (3 inches diameter)..<	215	43	10	10.64 meters
Nail in blaze in oak tree (3 inches diameter)..<	281	24	20	6.22 meters.
Nail in blaze in cedar tree (5 inches diameter).....	358	28	40	15.92 meters.

PONT.

General locality.—Western shore of Irish Creek on point about ½ mile north of Choptank River entrance to creek. (See Chart No. 34.)

Immediate locality.—Observed station is in pasture land, about 5 feet above high water, 3 yards west of edge of bank, 30 yards south-southwest of point of bank, 35 yards north by west of point of bank, and ⅞ mile northeast of 2½-story frame house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Sticky" (N 14° 01' W).....	0	00	00	¼ mile.
Nail in blaze in locust tree (5 inches diameter).....	25	36	50	24.71 meters.
Right peak of barn.....	43	34	..	⅝ mile.
Left peak of house.....	80	10	..	1 mile.
Near peak of barn.....	143	06	..	⅝ mile.
Near peak of 2½-story house.....	231	32	..	⅝ mile.

STICKY.

General locality.—Western shore of Irish Creek about ¾ mile from Choptank River entrance to creek. (See Chart No. 34.)

Immediate locality.—Observed station is on small marsh point about 1 foot above high water, 8 yards east of shore, 8 yards west of shore, 4 yards south of a 3-foot terrace covered with small cedar and pine trees, and 23 yards north-northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Vue" (N 89° 43' E).....	0	00	00	½ mile.
Left peak of large house.....	2	04	..	1 mile.
Right corner of house.....	47	19	..	⅞ mile
Near peak of house.....	92	58	..	⅞ mile.
Nail in blaze in pine tree (6 inches diameter).....	231	25	40	8.72 meters.
Nail in blaze in pine tree (4 inches diameter).....	244	49	10	9.85 meters.
Nail in blaze in pine tree (4 inches diameter).....	269	21	30	8.63 meters.
Near peak of barn.....	317	55	..	½ mile.

VUE.

General locality.—Northern shore of Irish Creek, about $\frac{3}{4}$ mile from Choptank River entrance to creek. (See Chart No. 34.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 4 yards west-northwest of shore, 5 yards northeast of shore, and 8 yards north of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ila" (S 2° 45' W)	0	00	00	$\frac{1}{4}$ mile.
Right peak of barn	49	28	..	$\frac{3}{8}$ mile.
Right peak of house	52	30	..	$\frac{5}{8}$ mile.
Nail in blaze in cedar tree (4 inches diameter).....	160	52	10	24.91 meters.
Nail in blaze in cedar tree (12 inches diameter).....	186	14	40	45.03 meters.
Left corner of house	265	31	..	400 yards.
Left peak of house	271	30	..	$\frac{3}{8}$ mile.
Near peak of house	311	21	..	$\frac{1}{2}$ mile.
Right corner of house	352	34	..	$\frac{5}{8}$ mile.

ILA.

General locality.—Eastern shore of Irish Creek, about $\frac{1}{2}$ mile from Choptank River entrance to creek, on a point at north side of entrance to a cove. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 5 feet above high water, 3 yards south-southwest of edge of bank, 20 yards northeast of edge of bank at trees, 17 yards southeast of point of bank, and 23 yards east by north of point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Creek" (S 16° 51' W).....	0	00	00	$\frac{1}{2}$ mile.
Nail in blaze in locust tree (3 inches diameter).....	13	57	30	16.07 meters.
Nail in blaze in locust tree (4 inches diameter).....	28	06	10	19.32 meters.
Nail in blaze in locust tree (3 inches diameter).....	53	06	20	21.36 meters.
Left corner of barn	59	17	..	$\frac{1}{2}$ mile.
Near peak of barn	130	36	..	$\frac{3}{4}$ mile.
Left corner of left chimney of house.....	155	18	..	$\frac{5}{8}$ mile.
Left peak of house	191	36	..	$\frac{3}{8}$ mile.
Left peak of house	222	01	..	$\frac{1}{2}$ mile.
Left corner of left chimney of large house.....	265	09	..	$\frac{3}{8}$ mile.
Right peak of house	334	56	..	$\frac{5}{8}$ mile.

CREEK.

General locality.—Northeastern shore of Choptank River on east side of entrance to Irish Creek, about $\frac{5}{8}$ mile east-northeast of Royston Island. (See Chart No. 34.)

Immediate locality.—Observed station on marsh point about 1 foot above high water, 11 yards south-east of shore, 11 yards east of shore, 17 yards north-northeast of shore and 14 yards south of cut in shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Dot" (S 17° 34' W).....	0	00	00	4½ miles.
Right corner of house.....	118	45	..	¾ mile.
Right corner of house.....	146	12	..	1¼ miles.
Left peak of house.....	184	09	..	1½ miles.
Left corner of large chimney.....	230	02	..	¾ mile.
Near peak of large building.....	354	09	..	5¾ miles.

BENONI 2.

General locality.—Northern shore of Choptank River on Benoni Point at western side of entrance to Tred Avon River, about 1¾ miles northwest of Choptank River Light. (See Chart No. 34.)

Immediate locality.—Observed station is about 5 feet above high water, 9 yards south-southwest of foot of knoll and edge of marsh, 4 yards northeast of edge of bank, 25 yards east-southeast of point of bank, 30 yards north by west of point of marsh, and 100 yards southwest of a cove. Cement monument marking reference station is 7.45 meters N 42° 02' E of observed station.

Marks.—Observed station is nail in center of stub projecting 4 inches above a 4-inch tile pipe with top of pipe flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	"	
"Choptank River Light" (S 40° 01' E).....	0	00	00	1¼ miles.
"Large Water Tank".....	13	10	20	3½ miles.
Left corner of house.....	65	40	..	4½ miles.
Nail in blaze in water bush.....	181	09	10	7.68 meters.
Nail in blaze in water bush.....	231	34	40	4.54 meters.
Near peak of small house.....	245	50	..	1¾ miles.
Left corner of burnt house.....	261	14	..	2 miles.
REFERENCE STATION.....	262	02	40	7.45 meters.
Peak of near gable of large house.....	277	30	..	1¾ miles.
Nail in blaze in water bush.....	288	09	40	10.40 meters
Left corner of house.....	306	56	..	1½ miles

MUTTON.

General locality.—Western shore of Tred Avon River opposite town of Oxford, about 1¼ miles north-northeast of Benoni Point. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 5 feet above high water, 13 yards west of edge of tree-fringed bank at edge of strip of marsh, 20 yards southwest of edge of bank, and 25 yards northeast of edge of bank at bend.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 6° 44' E).....	0	00	00	2¼ miles.
Right corner of barn.....	70	54	..	¼ mile.
Near corner of barn.....	108	44	..	600 yards.
Center of chimney outside of house.....	161	53	..	¼ mile.
Near corner of house.....	214	32	..	½ mile.
Nail in blaze in persimmon tree (12 inches diameter).....	223	57	20	18.44 meters.
Nail in blaze in cedar tree (8 inches diameter).....	242	32	30	13.48 meters.
Nail in blaze in cedar tree (10 inches diameter).....	279	04	40	11.80 meters.
Nail in blaze in locust tree (6 inches diameter).....	354	18	20	17.18 meters.

TRED.

General locality.—Western shore of Tred Avon River about $\frac{1}{2}$ mile west of Oxford. (See Chart No. 34.)

Immediate locality.—Observed station is about on level with high water, 2 yards west of shore of marsh strip, 6 yards east of foot of a bank, 6 feet high, 30 yards south by east of small house among trees, 13 yards south by east of end of fence, and 20 yards north of small point of marsh strip. Cement monument marking reference station is 4.98 meters N $68^{\circ} 24'$ W of observed station and at foot of bank.

Marks.—Observed station is nail in center of cypress stub projecting 5 inches above 4-inch tile pipe with top of pipe flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

"Choptank River Light" (S $0^{\circ} 22'$ E).....	0	00	00	.....	2 $\frac{5}{8}$ miles.
REFERENCE STATION.....	111	59	00	.....	4.98 meters.
Near peak of small house.....	171	43	..	.....	29 yards.
Windmill on wooden tower.....	212	46	..	.....	1 $\frac{3}{8}$ miles.
Left peak between two chimneys of large house.....	238	08	..	.....	1 $\frac{5}{8}$ miles.
Left peak of Oxford wharf house.....	277	22	..	.....	$\frac{3}{4}$ mile.
Windmill.....	324	51	..	.....	1 mile.

BELLEVUE.

General locality.—Western shore of Tred Avon River at Bellevue steamboat landing about $\frac{3}{4}$ mile northwest of Oxford steamboat landing. (See Chart No. 34.)

Immediate locality.—Observed station is on south side of roadway pier to Bellevue wharf, about 16 yards south by west of a crab house, and 25 yards west of wharf house.

Marks.—Observed station is center of 3-inch square staff 12 feet high.

References.—

Right corner of storehouse.....	N. E.	.....	16.00 meters.
Left corner of wharf house.....	E. by N.	.....	24.25 meters.
Right corner of wharf house.....	E. by S.	.....	24.18 meters.
Center one of four nails in plank.....	N. by E.	.....	3.42 meters.
Center one of four nails in plank.....	E. by S.	.....	.73 meters.
Center one of four nails in plank.....	W. by N.	.....	.82 meters.

TAR.

General locality.—Western shore of Tred Avon River on point between Tar Creek and Plaindealing Creek about $1\frac{1}{4}$ miles north of Oxford steamboat wharf. (See Chart No. 34.)

Immediate locality.—Observed station is on a long point about 4 feet above high water, 10 yards east-northeast of Tar Creek, 9 yards north by west of point of bank, 10 yards northwest by west of edge of bank, 6 yards west-southwest of edge of bank, and 60 yards west by north of extreme end of point of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

"Peck" (S $55^{\circ} 15'$ E).....	0	00	00	.....	$\frac{1}{2}$ mile.
Spindle on left cupola of long barn.....	10	35	..	.....	1 $\frac{1}{2}$ miles.
Stack of ice plant at Oxford.....	52	20	..	.....	1 $\frac{3}{8}$ miles.
Weather vane on barn cupola.....	105	41	..	.....	$\frac{3}{4}$ mile.
Left peak of 2 $\frac{1}{2}$ -story frame house.....	128	04	..	.....	$\frac{1}{2}$ mile.
Right corner of frame house.....	203	00	..	.....	127 yards.
Front peak of frame house.....	246	08	..	.....	$\frac{1}{2}$ mile.
Left peak of cupola.....	337	08	..	.....	$\frac{3}{8}$ mile.

PECK.

General locality.—Northeastern shore of Tred Avon River on Peck Point about 1 mile northeast of Oxford Steamboat wharf. (See Chart No. 34.)

Immediate locality.—Observed station is in woods about 8 feet above high water, 4 yards north of edge of bank, 4 yards northwest of edge of bank, and 8 yards east of edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tall" (S 82° 32' E).....	0	00	00	1/2 mile.
Spindle on left cupola on long barn.....	41	55	..	1 3/4 miles.
Right peak of building with cupola.....	82	05	..	3/8 mile.
Nail in blaze in locust tree (6 inches diameter)	83	59	10	2.80 meters.
Left corner of large 2 1/4-story house.....	150	40	..	1 1/4 miles.
Spindle on barn cupola.....	160	35	..	1 1/4 miles.
Nail in blaze in cherry tree (4 inches diameter)	200	59	20	5.65 meters.
Nail in blaze in persimmon tree (3 inches diameter).....	314	22	30	3.93 meters.

TALL.

General locality.—Northwestern shore of Tred Avon River on a prominent point 1 3/8 miles northeast of Oxford steamboat wharf. (See Chart No. 34.)

Immediate locality.—Observed station is among cedar and wild pear trees about 2 feet above high water 7 yards north of shore, 40 yards east by north of shore, and 50 yards north-northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of the ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Plain" (N 25° 25' E).....	0	00	00	3/8 mile.
Right peak of house.....	37	35	..	1 5/8 miles.
Top of roof of tower.....	65	17	..	7/8 mile.
Nail in blaze in cedar tree (6 inches diameter).....	79	02	30	2.62 meters.
Spindle on barn cupola.....	105	15	..	1 1/4 miles.
Spindle on left cupola of large barn.....	135	04	..	1 mile.
Nail in blaze in cedar tree (5 inches diameter).....	162	48	30	4.65 meters.
Right peak of Oxford wharf house.....	211	08	..	1 3/8 miles.
Nail in blaze in cedar tree (5 inches diameter).....	218	45	30	6.90 meters.
Spindle on top of water tank.....	240	35	..	1 1/2 miles.
Nail in blaze in cedar tree (8 inches diameter).....	308	46	40	3.08 meters.

PLAIN.

General locality.—Western shore of Tred Avon River about 1/2 mile west of north side of entrance to Trippe Creek, and 1 3/8 miles south-southwest of Double Mills wharf. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 3 feet above high water, 5 yards southwest of shore, 10 yards west of shore at first water bush, and 150 yards northwest of point of shore. Cement monument marking reference station is 17.90 meters S 55° 16' E of observed station.

Marks.—Observed station is nail in center of 2-inch stub in center of 2-inch tile pipe with top of stub projecting 12 inches above surface of ground. Subsurface mark is another 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 2 inches above surface of ground.

References.—

	°	'	"	
"Spin" (N 1° 18' W).....	0	00	00	 5/8 mile.
Near peak of very large house.....	7	50	..	 7/8 mile.
Center of cupola on wharf house at Double Mills.....	19	00	..	 1 3/8 miles.
Spindle on barn cupola.....	34	02	..	 1 1/2 miles.
REFERENCE STATION.....	126	01	20	 17.90 meters.
Spindle on left cupola on long barn.....	174	45	..	 1 3/8 miles.
Windmill.....	205	40	..	 1 1/8 miles.
Near peak of large house.....	246	46	..	 3/4 mile.
Near peak of house.....	318	18	..	 3/8 mile.

SPIN.

General locality.—Western shore of Tred Avon River on a point of land between two small creeks about 3/4 mile northwest of entrance to Trippe Creek, and 1/8 mile south-southwest of Double Mills wharf. (See Chart No. 34.)

Immediate locality.—Observed station is in pasture land near 4 large trees about 10 feet above high water, 20 yards north by west of bank edge, 30 yards west by north of point of bank and 90 yards northeast of a slight cut in the bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Martin" (N 32° 01' E).....	0	00	00	 3/8 mile.
Left corner of large frame house.....	12	37	..	 1 mile.
Nail in blaze in pine tree (34 inches diameter).....	23	28	00	 9.74 meters.
Near corner of brick house.....	45	26	..	 1/2 mile.
Nail in blaze in cedar tree (14 inches diameter).....	10	47	50	 10.45 meters.
Nail in blaze in holly tree (17 inches diameter).....	180	28	..	 6.90 meters.
Nail in blaze in mulberry tree (30 inches diameter).....	213	54	20	 7.01 meters.
Windmill.....	231	53	..	 3/8 mile.
Right corner of house.....	278	13	..	 3/8 mile.
Right corner of very long frame house.....	350	46	..	 3/8 mile.
Cupola on Double Mills wharf house.....	358	18	..	 7/8 mile.

MARTIN.

General locality.—Western shore of Tred Avon River about 1 mile north-northwest of entrance to Trippe Creek, and 1/2 mile southwest of Double Mills wharf. (See Chart No. 34.)

Immediate locality.—Observed station is on a long narrow point about 2 feet above high water, 8 yards southwest of shore, 11 yards north of piling protecting shore, 30 yards northwest of extreme end of point, and 14 yards east of middle one of three apple trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center point of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Neva" (N 24° 39' E).....	0	00	00	¾ mile.
Spindle on cupola of Double Mills wharf house	4	12	..	¾ mile.
Left peak of large 2½-story house.....	29	27	..	½ mile.
Right corner of brick house.....	06	51	..	¾ mile.
Nail in blaze in apple tree.....	224	29	50	21.72 meters.
Nail in blaze in apple tree (8 inches diam- eter).....	234	06	20	16.72 meters.
Left corner large house.....	247	10	..	146 yards.
Nail in blaze in apple tree (6 inches diam- eter).....	250	47	20	12.89 meters.
Left corner house.....	313	03	..	¼ mile.
Left peak of roof of house.....	347	41	..	¾ mile.

NEVA.

General locality.—Western shore of Tred Avon River at Double Mills wharf about 1¾ miles north of entrance to Trippe Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in southeast corner of a pasture about 3 feet above high water 100 yards west-southwest of Double Mills wharf 5 yards west-southwest of wire and lath fence at road, 14 yards north of bank 1 foot high at river, and 14 yards northwest of corner post of fence.

Marks.—Observed station is center of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Robertson" (N 11° 57' E).....	0	00	00	¾ mile.
Spindle on cupola on Double Mills wharf house.....	63	00	..	100 yards.
Nail in blaze in horse chestnut tree (8 inches diameter).....	89	03	40	5.86 meters.
Right corner of right chimney outside of house.	92	03	..	¼ mile.
Right corner of brick house.....	152	08	..	¾ mile.
Spindle on left cupola on long barn.....	173	02	..	2¾ miles.
Right corner of house.....	267	40	..	250 yards.
Nail in blaze in linden tree (10 inches diam- eter).....	315	58	30	20.30 meters.

ROBERTSON.

General locality.—Northwestern shore of Tred Avon River about ¾ mile north of Double Mills Wharf and ¾ mile west of end of Long Point. (See Chart No. 34.)

Immediate locality.—Observed station is on grassy land about 2 feet above high water, 7 yards north of shore, 2 yards south of fence, 3 yards east of a few very small cedar trees, and 40 yards west of cedar trees on high land beyond gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Stretch" (S 88° 57' E).....	0	00	00	¼ mile.
Windmill on wooden tower.....	9	47	..	1 mile.
Right corner of building.....	40	22	..	¾ mile.
"Aye" (weather vane on largest barn cupola)	46	18	26	½ mile.
Right corner of house.....	60	22	..	½ mile.
Weather vane on Double Mills Wharf house..	93	29	..	¾ mile.
Right peak of large house.....	116	33	..	¾ mile.
Nail in blaze in fence post.....	175	05	10	4.47 meters.
Nail in blaze in fence post.....	214	15	20	2.27 meters.
Nail in blaze in fence post.....	306	04	50	1.80 meters.

STRETCH.

General locality.—Western shore of upper Tred Avon River on Long Point at south side of entrance to Maxmore Creek about $\frac{1}{2}$ mile northeast of Double Mills Wharf. (See Chart No. 34.)

Immediate locality.—Observed station is on a rounded marsh point about 1 foot above high water, 16 yards west-northwest of shore, and 22 yards west-southwest of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	'	"	
"May" (N $71^{\circ} 30'$ E).....	0	00	00	 $\frac{3}{8}$ mile.
Near peak of barn cupola.....	34	22	..	 $\frac{3}{8}$ mile.
"Aye" (weather vane on largest barn cupola).....	100	20	10	 $\frac{3}{8}$ mile.
Right corner of quarter house.....	100	39	..	 $\frac{3}{8}$ mile.
Right corner of large house.....	120	16	..	 $\frac{3}{8}$ mile.
Weather vane on Double Mills Wharf house..	154	44	..	 $\frac{1}{2}$ mile.
Chimney among trees.....	275	51	..	 $\frac{3}{4}$ mile.

MAY.

General locality.—Northwestern shore of upper Tred Avon River about $\frac{3}{8}$ mile east of entrance to Maxmore Creek and $\frac{3}{8}$ mile northeast of Double Mills wharf. (See Chart No. 34.)

Immediate locality.—Observed station is at point of woods on marsh about 1 foot above high water, 10 yards west-northwest of shore, 11 yards north of shore, and 20 yards east of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	'	"	
"Peebee" (N $48^{\circ} 14'$ E).....	0	00	00	 $\frac{3}{8}$ mile.
Left corner of house.....	10	43	..	 $\frac{3}{4}$ mile.
Left corner of large house.....	56	43	..	 1 mile.
Spindle on barn cupola.....	75	59	..	 $\frac{1}{2}$ mile.
"Aye" (weather vane on largest barn cupola). ..	165	46	40	 $\frac{3}{8}$ mile.
Weather vane on Double Mills Wharf house..	190	15	..	 $\frac{7}{8}$ mile.
Nail in blaze in pine tree (8 inches diameter). ..	269	50	00	 6.81 meters.
Nail in blaze in pine tree (4 inches diameter). ..	290	09	50	 9.39 meters.
Nail in blaze in cedar tree (6 inches diameter) ..	316	15	00	 6.44 meters.

PEEBEE.

General locality.—Western shore of upper Tred Avon about $1\frac{1}{4}$ miles northeast of Double Mills Wharf and $\frac{3}{8}$ mile northwest of entrance to Peachblossom Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 4 feet above high water, 6 yards southwest of edge of bank, 14 yards west-northwest of edge of bank, 16 yards northwest of extreme point of bank, 50 yards northeast of a clump of cedar trees, and 400 yards east of dense woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	'	"	
"Neck" (N $28^{\circ} 58'$ E).....	0	00	00	 $\frac{1}{4}$ mile.
Spindle on barn cupola.....	32	39	..	 $\frac{1}{2}$ mile.
Nail in blaze in cedar tree (16 inches diameter) ..	68	50	10	 9.08 meters.
Left corner of house among trees.....	114	40	..	 $\frac{3}{4}$ mile.
Left corner of frame building showing through cedar trees.....	193	46	..	 1 mile.
Nail in blaze in cedar tree (7 inches diameter). ..	305	54	00	 16.90 meters.
Nail in blaze in cedar tree (12 inches diameter).....	328	43	00	 9.83 meters.
Peak of building.....	358	14	..	 2 miles.

NECK.

General locality.—Western shore of upper Tred Avon River on Neck Point opposite Camden Point and about $\frac{1}{4}$ mile north-northwest of entrance to Peachblossom Creek. (See Chart No. 34.)

Immediate locality.—Observed station is about 1 foot above high water, 5 yards west-southwest of shore, 12 yards north of shore, and 8 yards northwest of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Stab" (N 11° 49' W).....	0	00	00	 $\frac{3}{8}$ mile.
Near peak of barn.....	14	33	..	 $\frac{1}{2}$ mile.
Near peak of large house.....	66	06	..	 $\frac{3}{4}$ mile.
Right peak of large house.....	100	13	..	 $\frac{1}{2}$ mile.
Left corner of large house among trees.....	170	24	..	 $\frac{3}{4}$ mile.
Windmill on wooden tower.....	175	32	..	 $\frac{3}{4}$ mile.
Near peak of house.....	246	31	..	 $1\frac{1}{2}$ miles.

STAB.

General locality.—Western shore of upper Tred Avon River, on first point north of Neck Point, about $\frac{1}{8}$ mile north-northwest of entrance to Peachblossom Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land, about 8 feet above high water, 3 yards northwest of edge of bank, 25 yards northeast of an oak tree at ravine, and 6 yards west of point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Water" (N 21° 19' E).....	0	00	00	 $\frac{3}{8}$ mile.
Left peak of barn.....	15	02	..	 $1\frac{1}{8}$ miles.
Peak of dormer window of house.....	29	34	..	 $\frac{3}{4}$ mile.
Spindle on barn cupola.....	99	43	..	 $\frac{5}{8}$ mile.
Left corner of large house among trees.....	140	32	..	 $1\frac{1}{8}$ miles.
Windmill on wooden tower.....	143	50	..	 $1\frac{1}{8}$ miles.
Nail in blaze in oak tree (30 inches diameter).....	199	15	10	 22.06 meters.
Right peak of large barn.....	249	17	..	 $\frac{3}{8}$ mile.
Nail in blaze in cedar tree (12 inches diameter).....	351	13	10	 23.61 meters.

WATER.

General locality.—Western shore of upper Tred Avon River, opposite Watermelon Point, about $\frac{3}{4}$ mile north of Neck Point, and $1\frac{1}{4}$ miles north of entrance to Peachblossom Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field west of a broad marsh about 6 feet above high water, 2 yards west of edge of bank, 35 yards north-northwest of point of bank, 20 yards south of point of bank, and 45 yards east-northeast of inside curve of cut.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Melon" (N 83° 37' E).....	0	00	00	 $\frac{1}{4}$ mile.
Left large chimney of house.....	59	15	..	 $\frac{3}{4}$ mile.
Spindle on barn cupola.....	65	10	..	 $\frac{1}{8}$ mile.
Center of cedar tree.....	198	39	..	 120 yards.
Left corner of house.....	251	33	..	 $\frac{5}{8}$ mile.
Right corner of house.....	293	02	..	 $\frac{1}{8}$ mile.

RADCLIFFE.

General locality.—Northwestern shore of Tred Avon River, on point of land between Dixon Creek and Tred Avon River. (See Chart No. 34.)

Immediate locality.—Observed station is on small piece of fast land at end of marsh point, about 2 feet above high water, 11 yards northeast by north of shore, 15 yards north of shore, 40 yards southeast of shore, and among several pine and oak trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bateman" (S 70° 22' E).....	0	00	00	 ¼ mile.
End of stable.....	24	55	..	 ¾ mile.
Left end of boat house roof.....	103	19	..	 ¼ mile.
Near peak of barn.....	122	55	..	 ¼ mile.
Left chimney of house.....	173	21	..	 ¾ mile.
Nail in blaze in pine tree (20 inches diam- eter).....	192	56	50	 12.59 meters.
Near peak of house.....	206	02	..	 ¼ mile.
Nail in blaze in oak tree (12 inches diam- eter).....	290	06	10	 5.01 meters.
Near peak of barn.....	337	43	..	 ½ mile.
Nail in blaze in pine tree (20 inches diam- eter).....	339	07	20	 9.77 meters.

BATEMAN.

General locality.—Southeastern shore of upper Tred Avon River, about ¾ mile east of entrance to Dixon Creek, and 1½ miles southwest of Easton Point Wharf. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 5 yards southeast of shore, 12 yards southwest of shore, and 20 yards northeast of high land.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Melon" (S 41° 10' W).....	0	00	00	 ¾ mile.
Left end of boathouse roof.....	25	18	..	 ½ mile.
Peak of barn.....	37	06	..	 ½ mile.
Near peak of corn house.....	38	37	..	 ½ mile.
Left chimney of large house.....	63	45	..	 ¾ mile.
Weather vane on large house.....	77	28	..	 ¼ mile.
Middle dormer window of large house.....	139	25	..	 ¾ mile.
Peak of barn.....	162	05	..	 ¾ mile.
Windmill.....	263	34	..	 ¼ mile.

MELON.

General locality.—Eastern shore of upper Tred Avon River, on Watermelon Point, about ½ mile south of entrance to Dixon Creek, ¾ mile north of Camden Point, and 1½ miles north of entrance to Peachblossom Creek. (See Chart No. 34.)

Immediate locality.—Observed station is about 9 feet above high water, 30 yards south-southeast of edge of bank, 60 yards east by south of point of bank at large cedar tree, 35 yards east of edge of bank, 150 yards northwest of a cove, and 100 yards west by south of small cedar tree at cut in bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Stab" (S 47° 10' W).....	0	00	00	 ¼ mile.
Peak of porch of house	79	03	..	 ½ mile.
Weather vane on barn	112	04	..	 ¾ mile.
Near peak of large barn	127	37	..	 ¾ mile.
Peak of left dormer window of large house	156	56	..	 ¾ mile.
Right side of right porch pillar on house	192	56	..	 ¾ mile.
Left corner of large chimney of house	305	26	..	 ¾ mile.

GASH.

General locality.—Eastern shore of upper Tred Avon River on point of land between Camden Point and Watermelon Point, about ¾ mile north of entrance to Peachblossom Creek. (See Chart No. 34.)

Immediate locality.—Observed station is about 5 feet above high water, 16 yards north of shore, 25 yards east-northeast of point of shore, 18 yards east-southeast of bank, 10 yards west of field, and near several large pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Camden" (S 11° 43' W).....	0	00	00	 ¾ mile.
Left corner of near chimney of house.....	84	18	..	 ¾ mile.
Nail in blaze in pine tree (24 inches diameter).....	123	43	50	 8.30 meters.
Nail in blaze in locust tree (5 inches diameter).....	203	43	50	 11.93 meters.
Nail in blaze in oak tree (12 inches diameter).....	298	35	00	 7.24 meters.
Weather vane on barn cupola.....	318	38	..	 ¾ mile.
Spindle on barn cupola.....	351	44	..	 ¾ mile.

CAMDEN.

General locality.—Eastern shore of upper Tred Avon River on Camden Point at north side of entrance to a small cove, and about ¾ mile north of entrance to Peachblossom Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on sandy grass land about 2 feet above high water, 8 yards north-northeast of sandy shore, 22 yards south-southeast of shore of Tred Avon River, 30 yards east of extreme end of point, 10 yards southeast of a mudhole, and 30 yards southwest of clump of cedar and hackberry trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Blossom" (S 6° 31' E).....	0	00	00	 ¾ mile.
Windmill on wooden tower.....	1	29	..	 ¾ mile.
Left peak of long building.....	55	07	..	 1¼ miles.
Near peak of barn.....	179	21	..	 ¾ mile.
Nail in blaze in cedar tree (7 inches diameter).....	212	39	20	 27.27 meters.
Nail in blaze in hackberry tree (3 inches diameter).....	224	03	00	 26.84 meters.
Nail in blaze in cedar tree (14 inches diameter).....	239	40	40	 27.81 meters.
Left corner of roof of house.....	329	14	..	 ¾ mile.

BLOSSOM.

General locality.—Eastern shore of Tred Avon River at north side of entrance to Peachblossom Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 14 yards east by south of shore of river, 12 yards west-northwest of shore of small elliptical cove, and 40 yards north by west of entrance to cove.

Marks.—Observed station is center point of triangle on standard cement monument with top projecting 4 inches above the surface of the ground. Subsurface mark is center of 2-inch tile pipe 24 inches long buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Wall" (S 50° 07' W).....	0	00	00	 1/2 mile.
Weather vane on Double Mills Wharf house..	17	03	..	 1 3/8 miles.
Near peak of barn.....	122	51	..	 1 1/4 miles.
Near peak between two large chimneys on large house.....	157	49	..	 1/2 mile.
Left corner of steps on large house among trees.....	259	40	..	 5/8 mile.
Left corner of left porch post on large house among trees.....	298	23	..	 3/8 mile.
Windmill on wooden tower.....	305	38	..	 3/8 mile.

WALL.

General locality.—Southeastern shore of Tred Avon River on a point of land at west side of entrance to a small creek about 1 mile east-northeast of Double Mills Wharf. (See Chart No. 34.)

Immediate locality.—Observed station is in pasture land about 5 feet above high water, 20 yards south of extreme edge of bank, 4 yards west of terrace, 20 yards west of shore, 18 yards south-southeast of edge of bank, and 20 yards east of gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Aye" (weather vane on largest barn cupola) (S 61° 00' W).....	0	00	00	 5/8 mile.
Right corner of house.....	7	59	..	 5/8 mile.
Weather vane on Double Mills Wharf house..	14	49	..	 1 mile.
Nail in blaze in locust tree (30 inches diameter).....	37	36	50	 17.37 meters.
Nail in blaze in hackberry tree (14 inches diameter).....	154	55	20	 5.03 meters.
Windmill on wooden tower.....	231	09	..	 3/8 mile.
Nail in blaze in cedar tree (28 inches diameter).....	255	31	40	 32.13 meters.
Nail in blaze in oak tree (30 inches diameter). 340	33	40	.....	20.96 meters.

AYE.

General locality.—Southeastern shore of Tred Avon River about 1/2 mile east of Double Mills Wharf. (See Chart No. 34.)

Immediate locality.—Observed station is on cupola on largest barn.

Marks.—Observed station is spindle on cupola.

References.—None necessary.

HUNTER.

General locality.—Eastern shore of Tred Avon River at south side of entrance to a cove about $\frac{1}{2}$ mile south-southeast of Double Mills Wharf, and 1 mile north of entrance to Trippe Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 3 yards southwest of shore, 5 yards east-northeast of shore, 6 yards southeast of point of marsh, and 10 yards west of a clump of wild cherry, hackberry, and cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Weave" (S 27° 35' W).....	0	00	00	 $\frac{1}{2}$ mile.
Near peak between two chimneys of large house.....	18	39	..	 $1\frac{5}{8}$ miles.
Near peak of cupola on building.....	35	36	..	 $1\frac{3}{4}$ miles.
Right peak of large house.....	69	07	..	 $\frac{1}{2}$ mile.
Peak of dormer window of large house.....	116	34	..	 $\frac{1}{2}$ mile.
Weather vane on wharf house at Double Mills.....	128	57	..	 $\frac{1}{2}$ mile.
Left corner of large house.....	157	40	..	 $\frac{3}{8}$ mile.
"Aye" (weather vane on largest barn copola).....	175	18	20	 $\frac{3}{8}$ mile.
Nail in blaze in wild-cherry tree (5 inches diameter).....	208	35	20	 10.70 meters.
Nail in blaze in hackberry tree (6 inches diameter).....	232	14	00	 11.18 meters.
Nail in blaze in leaning cedar tree (8 inches diameter).....	263	50	50	 9.02 meters.
Nail in blaze in cedar tree (20 inches diameter).....	272	40	50	 13.34 meters.
Near peak of brick house.....	352	45	..	 $\frac{1}{4}$ mile.

WEAVE.

General locality.—Eastern shore of Tred Avon River about $\frac{1}{2}$ mile north of entrance to Trippe Creek, and 1 mile south of Double Mills Wharf. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 20 yards east of shore, 16 yards south of shore at small inlet, 6 yards west of small point on inlet, and 20 yards northeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Twin" (S 7° 23' E).....	0	00	00	 $\frac{3}{8}$ mile.
Spindle on left cupola on long barn.....	15	04	..	 $1\frac{1}{2}$ miles.
Stack of ice plant at Oxford.....	51	05	..	 2 miles.
Near peak between two chimneys of large house.....	61	35	..	 $1\frac{1}{4}$ miles.
Left corner of chimney outside left end of house.....	92	28	..	 $\frac{1}{2}$ mile.
Left corner of large house.....	157	58	..	 $\frac{1}{2}$ mile.
Peak of near gable of large house.....	181	16	..	 1 mile.
Weather vane on wharf house at Double Mills.....	189	42	..	 $\frac{1}{2}$ mile.
Left corner of large house.....	205	26	..	 $\frac{3}{8}$ mile.
Left peak of house.....	237	58	..	 300 yards.

TWIN.

General locality.—Eastern shore of Tred Avon River on point of land on north side of entrance to Trippe Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 4 feet above high water, 45 yards east-southeast of shore of Tred Avon River, and 110 yards northwest of shore of Trippe Creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Toe" (N 69° 34' E).....	0	00	00	1/2 mile.
Near peak of house.....	4	52'	..	1 3/8 miles.
Top of roof of tower.....	87	15	..	1/2 mile.
Spindle on left cupola on large barn.....	121	32	..	1 1/4 miles.
Right corner of large house.....	189	12	..	3/8 mile.
Left peak of house.....	297	01	..	1/2 mile.
Near peak of house in trees.....	345	37	..	1 mile.

TOE.

General locality.—Northern shore of Trippe Creek on a point of land about 1/2 mile northeast of point at north side of entrance to Trippe Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 10 yards northwest of shore, 14 yards southwest of shore, 12 yards north of round point of shore, 12 yards west of round point of shore, and 30 yards southeast of cedar and persimmon trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Trippe" (N 64° 19' E).....	0	00	00	1/4 mile.
Near peak of house.....	16	03	..	1 1/4 miles.
Near peak of house.....	33	06	..	1 3/8 miles.
Near peak of barn.....	126	49	..	1 mile.
Top of tower of house.....	137	52	..	5/8 mile.
"Weather Bureau Staff".....	166	59	50	2 3/4 miles.
Nail in blaze in persimmon tree (7 inches diameter).....	227	21	20	25.74 meters.
Nail in blaze in cedar tree (6 inches diameter).....	250	42	30	21.68 meters.
Right corner of house.....	327	07	..	1/2 mile.

TRIPPE.

General locality.—Northern shore of Trippe Creek about 5/8 mile east of Tred Avon River and 1/8 mile east of entrance to a small creek. (See Chart No. 34.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 23 yards northwest of shore at entrance to slough, 30 yards east-northeast of shore, and 50 yards north by east of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Venture" (S 72° 55' E).....	0	00	00	 ¾ mile.
Near peak of dormer window on large house..	3	17	..	 1½ miles.
Left corner of large chimney.....	31	06	..	 ¾ mile.
Left peak of house.....	93	10	..	 1 mile.
Stack of ice plant.....	128	54	..	 2¾ miles.
Near peak of barn.....	274	07	..	 ½ mile.
Near peak of large house.....	323	15	..	 ½ mile.
Right corner of house.....	335	44	..	 ¾ mile.

VENTURE.

General locality.—Northern shore of Trippe Creek on a point on the west side of a cove about 1 mile east of Tred Avon River. (See Chart No. 34.)

Immediate locality.—Observed station is about 1 foot above high water on the inner edge of a strip of marsh at bottom of a bank 4 feet high, 4 yards north of shore of marsh, 8 yards north-northwest of point of marsh, 3 yards south by west of top of bank, 7 yards west of point of bank, and 6 yards west of a lone cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Plow" (N 87° 47' E).....	0	00	00	 ¼ mile.
Nail in blaze in cedar tree (18 inches diameter).....	6	16	30	 5.74 meters.
Peak of dormer window of large house.....	23	38	..	 1 mile.
Right peak of right barn.....	51	10	..	 ¾ mile.
Left corner of left chimney of house.....	72	08	..	 ½ mile.
Left peak of barn.....	246	17	..	 ¾ mile.
Spindle on right cupola of barn.....	314	10	..	 ¾ mile.

PLOW.

General locality.—Northern shore of Trippe Creek on a point of land between two coves about 1¼ miles from Tred Avon River. (See Chart No. 34.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 15 yards west-northwest of shore, 25 yards north of shore, 20 yards east of extreme end of point, and 5 yards south of foot of bank 7 feet high.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Higher" (N 79° 14' E).....	0	00	00	 ¼ mile.
Right corner of porch underpinning.....	32	14	..	 ¾ mile.
Left peak of barn.....	54	52	..	 1 mile.
Near peak of barn.....	103	30	..	 ½ mile.
Left corner of large chimney.....	117	10	..	 ½ mile.
Nail in blaze in persimmon tree (2½ inches diameter).....	257	46	40	 12.76 meters.
Nail in blaze in oak tree (5 inches diameter).....	267	47	10	 14.53 meters.
Nail in blaze in persimmon tree (2½ inches diameter).....	284	57	00	 15.85 meters.
Near peak of barn.....	345	07	..	 ¾ mile.

HIGHER.

General locality.—Northern shore of Trippe Creek at east side of entrance to a cove about $1\frac{3}{4}$ miles from Tred Avon River entrance to Trippe Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 30 yards northeast of edge of bank, 35 yards southeast by east of row of trees, 50 yards east-southeast of point of bank and trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"All" (S 20° 17' E).....	0	00	00	$\frac{1}{4}$ mile.
Near peak of house.....	9	45	..	$\frac{3}{4}$ mile.
Near peak of large barn.....	45	04	..	$\frac{5}{8}$ mile.
Left corner of large chimney.....	55	31	..	$\frac{5}{8}$ mile.
Nail in blaze in sassafras tree ($2\frac{1}{2}$ inches diameter).....	138	19	00	31.63 meters.
Nail in blaze in locust tree (5 inches diameter).....	142	20	50	31.96 meters.
Spindle on left one of four barn cupolas.....	155	19	..	$\frac{3}{4}$ mile.
Nail in blaze in locust tree (5 inches diameter).....	173	32	30	30.93 meters.
Spindle on cupola.....	288	25	..	1 mile.

ALL.

General locality.—Northern shore of Trippe Creek about $1\frac{3}{4}$ miles from Tred Avon River entrance to Trippe Creek, and 300 yards west by north of a colonial house. (See Chart No. 34.)

Immediate locality.—Observed station is about 1 foot above high water, 35 yards southeast of shore, 35 yards east of round point of shore, 80 yards northwest of cut in shore, and 40 yards south by east of left one of nine large pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Cam" (S 70° 56' W).....	0	00	00	$\frac{1}{4}$ mile.
Left peak of barn.....	38	26	..	$1\frac{1}{4}$ miles.
Spindle on left one of four cupolas.....	74	48	..	$\frac{1}{2}$ mile.
Left corner of underpinning of Goldsborough house.....	184	18	..	300 yards.
Right corner of large chimney.....	226	04	..	$\frac{3}{8}$ mile.
Right peak of long barn.....	294	59	..	$\frac{1}{2}$ mile.
Left peak of house.....	333	38	..	$\frac{1}{2}$ mile.

CAM.

General locality.—Southern shore of Trippe Creek on a prominent point about $1\frac{1}{2}$ miles from Tred Avon River entrance to Creek. (See Chart No. 34.)

General locality.—Observed station is on marsh point about 10 yards southeast of shore, 20 yards south-southwest of point of shore, and 15 yards northeast by east of point of bank at marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Deux" (S 56° 11' W).....	0	00	00	$\frac{1}{4}$ mile.
Left peak of barn showing through trees.....	58	53	..	$\frac{3}{4}$ mile.
"Aye" (weather vane on large barn cupola).....	83	01	20	$1\frac{3}{4}$ miles.
Right peak of barn with cupola.....	112	56	..	$\frac{1}{2}$ mile.

References—Continued.

Left corner of underpinning of Goldsborough house.....	°	'	"	
	196	26	..	3½ mile.
Right corner large chimney.....	224	09	..	5½ mile.
Left peak of house.....	243	42	..	5½ mile.
Nail in blaze in persimmon tree (4 inches diameter).....	287	28	40	23.51 meters.
Nail in blaze in oak tree (5 inches diameter).....	313	59	30	15.77 meters.
Nail in blaze in oak tree (5 inches diameter).....	331	03	50	16.93 meters.
Left corner of large chimney.....	356	39	..	¼ mile.

DEUX.

General locality.—Southern shore of Trippe Creek about 1½ miles from Tred Avon River. (See Chart No. 34.)

Immediate locality.—Observed station is in an orchard about 8 feet above high water, 50 yards north-northeast of rambling house, 20 yards southeast of top of bank, 14 yards southwest of top of bank, 13 yards south of point of bank at ditch, and 3 yards east of a drainage ditch.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Crack" (S 72° 51' W).....	0	00	00	¼ mile.
Left peak of barn.....	52	55	..	1 mile.
Nail in blaze in pear tree (10 inches diameter).....	55	26	20	7.43 meters.
Near peak of barn.....	81	49	..	¾ mile.
Left peak of large barn.....	114	08	..	¾ mile.
Nail in blaze in twin locust tree.....	119	52	20	11.66 meters.
Nail in blaze in pear tree (6 inches diameter).....	193	56	50	6.29 meters.
Right corner of house.....	256	20	..	¾ mile.
Near corner of house.....	312	55	..	51 yards.

CRACK.

General locality.—Southern shore of Trippe Creek on point at west side of entrance to a small creek, about 1¼ miles from Tred Avon River entrance to creek. (See Chart No. 34.)

Immediate locality.—Observed station is about 3 feet above high water, 13 yards south of edge of bank 15 yards northeast of shore, 40 yards east of extreme end of point, and among scattering locust trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mistle" (N 31° 34' W).....	0	00	00	½ mile.
Near peak of shed.....	24	45	..	¾ mile.
Spindle on right one of four cupolas.....	55	41	..	¾ mile.
Near peak between two chimneys on large house.....	78	08	..	1½ miles.
Left corner of house.....	109	03	..	¼ mile.
Right peak of barn.....	135	14	..	¾ mile.
Near peak of barn.....	181	59	..	¾ mile.
Nail in blaze in cedar tree (3 inches diameter).....	258	17	20	13.98 meters.
Nail in blaze in locust tree (3 inches diameter).....	292	11	50	9.98 meters.
Nail in blaze in locust tree (2 inches diameter).....	349	50	40	7.78 meters.

MISTLE.

General locality.—Southern shore of Trippe Creek on a very long point, about $\frac{1}{4}$ mile east-northeast of Tred Avon River. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 10 yards south-southeast of shore, 14 yards west by north of shore, 24 yards southwest of extreme end of point, 4 yards south of a cedar tree, and 12 yards north of a cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Layor" (S 50° 38' W).....	0	00	00	 $\frac{3}{8}$ mile.
Near peak of house.....	135	45	..	 $\frac{1}{4}$ mile.
Nail in blaze in cedar tree (6 inches diam- eter).....	163	22	40	 3.45 meters.
Near peak of large house.....	183	36	..	 $\frac{3}{8}$ mile.
Right corner of house.....	222	45	..	 1 mile.
Left corner of large chimney.....	254	06	..	 $\frac{5}{8}$ mile.
Nail in blaze in cedar tree (12 inches diam- eter).....	302	11	20	 11.11 meters.
Nail in blaze in cedar tree (6 inches diam- eter).....	331	27	00	 13.42 meters.

LAYOR.

General locality.—Southern shore of Trippe Creek, about $\frac{1}{4}$ mile east of Tred Avon River. (See Chart No. 34.)

Immediate locality.—Observed station is in edge of cultivated land about 5 feet above high water, 50 yards south of shore, 17 yards east of bank, 2 yards south-southwest of water bushes, and 200 yards west of large lone tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Borough" (S 39° 05' W).....	0	00	00	 $\frac{5}{8}$ mile.
Near peak of large house.....	11	13	..	 $1\frac{1}{2}$ miles.
Near peak of large frame house.....	44	27	..	 $1\frac{3}{8}$ miles.
Near peak of ell of house.....	166	22	..	 $\frac{1}{2}$ mile.
Right peak of house.....	300	30	..	 $\frac{1}{2}$ mile.
Top of roof of tower.....	348	21	..	 $\frac{3}{8}$ mile.

BOROUGH.

General locality.—Southeastern shore of Tred Avon River, about $\frac{1}{4}$ mile north-northeast of entrance to Goldsboro Creek, and $\frac{1}{4}$ mile south-southwest of entrance to Trippe Creek. (See Chart No. 34.)

Immediate locality.—Observed station is about 3 feet above high water in cultivated land, 17 yards east-southeast of shore, 25 yards south of shore, 30 yards southwest of shore, $\frac{1}{8}$ mile northwest of house in trees, and $\frac{1}{4}$ mile west-southwest of large lone tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Golds" (S 38° 07' W).....	0	00	00	3/8 mile.
Spindle on barn cupola.....	52	57	..	2 1/8 miles.
Near peak of large house.....	70	07	..	1 mile.
Left corner of very large house.....	130	22	..	1 1/2 miles.
Near peak of wharf house at Double Mills....	138	20	..	1 3/8 miles.
Right corner of large building.....	172	49	..	1 1/2 miles.
Large lone tree.....	202	34	..	3/8 mile.
Right corner of house among trees.....	283	17	..	300 yards.
Spindle on left cupola on long barn.....	340	52	..	3/8 mile.

GOLDS.

General locality.—Eastern shore of Tred Avon River on a point of land between Goldsboro Creek and Mud Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on hard marsh about 1 foot above high water, 30 yards south of shore, 60 yards west-southwest of shore, and 60 yards south-southeast of point of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mud" (N 78° 58' W).....	0	00	00	5/8 mile.
Right peak between two chimneys of large house.....	28	43	..	1 mile.
Near peak of large house.....	76	38	..	1 7/8 miles.
Near peak of large barn.....	92	36	..	1 3/8 miles.
Right corner of old house.....	167	39	..	1/2 mile.
Left corner of large house.....	212	35	..	1/2 mile.
Near peak of large house.....	259	21	..	1/2 mile.
Church spire.....	320	06	40	1 3/8 miles.
Stack of iceplant at Oxford.....	338	06	..	1 3/8 miles.

MUD.

General locality.—Southeastern shore of Tred Avon River at western side of entrance to Mud Creek. (See Chart No. 34.)

Immediate locality.—Observed station is among trees on northeast point of a pasture about 4 feet above high water, 13 yards southwest of shore of pond on point, 20 yards north of end of pond, 25 yards northwest of shore of pond, and 45 yards south-southeast of a lone tree at shore of river.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Town" (N 85° 59' W).....	0	00	00	1/4 mile.
Spindle on barn cupola.....	5	14	..	1 3/8 miles.
Near peak of 2 1/2-story house.....	42	28	..	1 1/8 miles.
Right corner of 2 1/2-story house.....	71	42	..	1/2 mile.
Nail in blaze in hackberry tree (24 inches diameter).....	87	08	10	5.51 meters.
Center of roof of tower.....	157	45	..	1 1/8 miles.
Nail in blaze in twin elm tree.....	216	59	10	8.98 meters.
Spindle on cupola of long barn.....	220	40	..	7/8 mile.
Nail in blaze in elm tree (7 inches diameter).....	249	42	20	13.44 meters.
"Weather Bureau Staff".....	315	13	40	1 1/8 miles.

TOWN.

General locality.—Southeastern shore of Tred Avon River about $\frac{1}{4}$ mile northeast of east side of entrance to Town Creek, and $\frac{3}{4}$ mile northeast of Oxford steamboat wharf. (See Chart No. 34.)

Immediate locality.—Observed station is in northwest corner of a cultivated field about 6 feet above high water, 10 yards south of edge of bank, 12 yards east-southeast of point of bank, 25 yards west-southwest of edge of bank, 3 yards northeast of a fence, and 4 yards northeast of gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Riverview" (S 56° 27' W).....	0	00	00	 $\frac{7}{8}$ mile.
Nail in blaze in cedar tree (6 inches diameter).....	11	23	40	 5.02 meters.
Weather vane on barn cupola.....	44	12	..	 $1\frac{1}{8}$ miles.
Near peak of 2 $\frac{1}{4}$ -story house.....	92	35	..	 1 mile.
Left peak of large house.....	141	06	..	 $1\frac{1}{2}$ mile.
Near peak of house.....	184	59	..	 $2\frac{3}{4}$ miles.
Top of roof of tower.....	199	40	..	 $1\frac{3}{8}$ miles.
Spindle on left cupola of long barn.....	248	05	..	 $1\frac{1}{2}$ miles.
Right peak of large house.....	283	35	..	 $\frac{1}{2}$ mile.
Right of steamboat wharf house.....	359	41	..	 $\frac{3}{4}$ mile.

RIVERVIEW.

General locality.—Eastern shore of Tred Avon River about $\frac{1}{8}$ mile west by south of Oxford steamboat wharf. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is about 3 feet above high water, 3 yards east of shore, 23 yards south-southwest of a fisherman's shanty, and 50 yards north by west of west end of "Lovers Lane."

Marks.—Observed station is center of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"First" (S 17° 40' E).....	0	00	00	 $\frac{1}{2}$ mile.
"Choptank River Light".....	27	31	20	 $2\frac{1}{2}$ miles.
Left peak of building.....	82	54	..	 $\frac{3}{4}$ mile.
Spindle on barn cupola.....	171	17	..	 $\frac{7}{8}$ mile.
Left corner of fisherman's shanty.....	206	21	50	 25.82 meters.
Right corner of fisherman's shanty.....	224	12	40	 21.61 meters.
Left peak of large house.....	239	57	..	 $1\frac{1}{4}$ miles.
Right corner of steamboat wharf house.....	263	06	..	 $\frac{1}{2}$ mile.
Stack of iceplant.....	273	00	..	 $\frac{3}{8}$ mile.
Nail in blaze in oak tree (18 inches diameter). 342	44	40	.....	44.25 meters.

WEATHER BUREAU STAFF.

General locality.—Eastern side of Tred Avon River in the town of Oxford. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in park south of High and Primary Schools, 55 yards east of shore of Tred Avon River, 55 yards west of Morris Street, and in center of circle of trees.

Marks.—Observed station is center of galvanized iron staff on square galvanized angle-iron tower.

References.—None necessary.

FIRST.

General locality.—Eastern shore of Tred Avon River in town of Oxford about $\frac{1}{2}$ mile north of railroad wharves. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is about 8 feet above high water, 2 yards east-southeast of edge of bank, 4 yards east by north of point of bank, 4 yards northeast of edge of bank at small gully, 2 yards south of corner fence post, and 35 yards west of house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Bach" (S 17° 38' W).....	0	00	00	 $\frac{5}{8}$ mile.
Right peak of small house.....	51	59	..	 $1\frac{5}{8}$ miles.
Right peak of modern house.....	67	10	..	 $1\frac{5}{8}$ miles.
Left peak of small house.....	128	37	..	 $1\frac{5}{8}$ miles.
Nail in blaze in fence post.....	207	52	00	 4.98 meters.
Nail in blaze in apple tree (20 inches diameter).....	237	43	30	 11.94 meters.
Nail in blaze in apple tree (12 inches diameter).....	266	24	50	 14.56 meters.
Windmill.....	346	43	..	 $\frac{3}{4}$ mile.

BACH.

General locality.—Eastern shore of entrance to Tred Avon River on Bachelor Point about $1\frac{3}{4}$ miles north-northeast of Choptank River Light. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated field about 6 feet above high water, 30 yards east of edge of bank, 70 yards north-northeast of edge of bank on range with Choptank River Light, and 100 yards south by west of edge of bank of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 16° 59' W).....	0	00	00	 $1\frac{3}{8}$ miles.
Tangent of Benoni Point.....	55	29	..	 $1\frac{1}{4}$ miles.
Left peak of roof of house.....	147	25	..	 $1\frac{5}{8}$ miles.
Left corner of burnt house.....	166	05	..	 $1\frac{1}{8}$ miles.
Right corner of house.....	211	35	..	 $\frac{1}{4}$ mile.
Left corner of left chimney on very large house.....	240	46	..	 $\frac{5}{8}$ mile.
"Large water tank".....	338	00	20	 $2\frac{3}{4}$ miles.

BOONE.

General locality.—Northeastern shore of Choptank River about $\frac{3}{8}$ mile northwest of entrance to Boone Creek, $\frac{1}{2}$ mile southeast of Bachelor Point, and $1\frac{1}{2}$ miles northeast of Choptank River Light. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is about 5 feet above high water, 13 yards northeast of edge of tree-fringed bank, 60 yards south-southwest of right corner of house, and 50 yards south-southeast of large apple tree.

Marks.—Observed station is center point of triangle on standard cement monument with top 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 33° 54' W).....	0	00	00	1¼ miles.
Nail in blaze in locust tree (5 inches diameter).....	21	01	40	10.26 meters.
Nail in blaze in locust tree (10 inches diameter).....	65	31	10	20.59 meters.
Near peak of house.....	107	59	..	¼ mile.
Right corner of house.....	159	12	..	57 yards.
Near peak of house.....	195	28	..	¾ mile.
Nail in blaze in locust tree (4 inches diameter).....	323	14	00	13.02 meters.

ENTER.

General locality.—Northern shore of Island Creek on point at east side of entrance to a small cove, about ½ mile northeast of Choptank River and 1¾ miles east-northeast of Choptank River Light. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated land about 6 feet above high water, 16 yards north of edge of bank of creek, 18 yards south-southeast of edge of bank of cove, 30 yards east-northeast of outlet of cove, and 250 yards west by south of frame house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 72° 00' W).....	0	00	00	1¾ miles.
Nail in blaze in locust tree (6 inches diameter).....	67	05	40	39.96 meters.
Nail in blaze in cedar tree (10 inches diameter).....	109	17	20	16.91 meters.
Left corner of left chimney of house.....	117	35	..	2 miles.
Left corner of house.....	173	35	..	¾ mile.
Near corner of house.....	204	11	..	1½ miles.
"Large water tank".....	301	37	00	2½ miles.
Nail in blaze in locust tree (4 inches diameter).....	357	13	40	23.93 meters.

STRAW.

General locality.—Northern shore of Island Creek ¾ mile east-northeast of Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is about 6 feet above high water, 3 yards northeast of edge of bank, 18 yards east of bank, 4 yards west of wire fence, 8 yards northwest by west of point where bank meets fence, and 5 yards south of southeast corner of a small house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Delahay" (N 66° 10' E).....	0	00	00	¼ mile.
Nail in blaze in locust tree (4 inches diameter).....	15	43	00	4.33 meters.
Nail in blaze in locust tree (14 inches diameter).....	72	08	10	7.89 meters.
Left peak of barn.....	130	54	..	⅔ mile.
Nail in blaze in locust tree (8 inches diameter).....	221	41	10	14.86 meters.
Left corner of small house.....	240	26	..	5.94 meters.
Near corner of small house.....	287	16	..	4.04 meters.
Spindle on barn cupola.....	349	22	..	½ mile.

DELAHAY.

General locality.—Northern shore of Island Creek about 1 mile east-northeast of Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated land about 5 feet above high water, 2 yards northwest of edge of bank, 100 yards east of edge of bank of inlet, 27 yards northeast of point of bank, and 75 yards southwest of farm buildings.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Kent" (N 75° 56' E).....	0	00	00	 ¾ mile.
Left corner of house.....	15	16	..	 ¾ mile.
Near peak of barn.....	25	17	..	 ¾ mile.
Near peak of large modern house.....	122	02	..	 1 mile.
Near peak of large barn.....	137	38	..	 1¼ miles.
Nail in blaze in apple tree (10 inches diameter).....	165	30	40	 21.08 meters.
Nail in blaze in apple tree (10 inches diameter).....	183	52	40	 21.36 meters.
Nail in blaze in apple tree (7 inches diameter).....	269	51	50	 10.12 meters.
Spindle on barn cupola.....	313	09	..	 250 yards.

KENT.

General locality.—Northern shore of Island Creek on a point about 1¼ miles northeast of Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in a cultivated field about 5 feet above high water, 50 yards northwest of top of bank, 80 yards east of bank, 75 yards north-northeast of point and 110 yards east-south-east of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Harry" (N 36° 27' E).....	0	00	00	 ¾ mile.
Left corner of chimney outside left end of house.....	44	41	..	 ½ mile.
Near peak of barn.....	80	50	..	 ¾ mile.
Peak of ell of large house.....	187	03	..	 1¼ miles.
Near peak of building.....	217	54	..	 ¾ mile.
Spindle on barn cupola.....	240	41	..	 ¼ mile.
Near peak of large house.....	309	12	..	 ½ mile.

HARRY.

General locality.—Northern shore of Island Creek about 1½ miles from Choptank River. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is about 6 feet above high water, 9 yards northwest of edge of bank at cedar trees, 20 yards northeast of cut in bank, and 50 yards south-southwest of bank at cut in shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Charles" (N 55° 36' E).....	0	0	00	 ¾ mile.
Nail in blaze in locust tree (4 inches diameter).....	11	57	00	 17.38 meters.
Nail in blaze in locust tree (4 inches diameter).....	39	23	00	 8.81 meters.
Nail in blaze in cedar tree (4 inches diameter).....	78	04	30	 8.04 meters.
Left chimney outside of left end of house.....	92	16	..	 ¾ mile.
Right corner of building.....	131	06	..	 ¾ mile.
Spindle on barn cupola.....	186	37	..	 ½ mile.
Near peak of building.....	263	45	..	 ¾ mile.

CHARLES.

General locality.—Northern shore of Island Creek about 2 miles from Choptank River. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in southwest corner of truck garden about 6 feet above high water, 6 yards north of edge of bank, 25 yards west of top of bank near locust tree, and 3 yards east of edge of a 12-foot hole 6 feet deep.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Potato" (N 78° 01' E).....	0	00	00	 ¼ mile.
Nail in blaze in locust tree (4 inches diameter).....	23	23	00	 12.97 meters.
Nail in blaze in locust tree (4 inches diameter).....	32	29	00	 9.19 meters.
Near peak of small building.....	53	18	..	 ¾ mile.
Nail in blaze in cherry tree (12 inches diameter).....	112	20	20	 4.17 meters.
Right corner of chimney on quarter house.....	125	27	..	 ½ mile.
Near peak of large barn.....	213	02	..	 ¾ mile.
Nail in blaze in locust tree (5 inches diameter).....	216	27	20	 4.82 meters.
Left corner of barn.....	265	14	..	 100 yards.

POTATO.

General locality.—Northern shore of Island Creek about 2¼ miles northeast of Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 50 yards northwest of edge of bank, 70 yards west of shore at lowest point of bank, 70 yards north of edge of bank and 400 yards south of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ritter" (N 72° 30' E).....	0	00	00	 ¼ mile.
Right corner of Ritter house.....	4	55	..	 ½ mile.
Right peak of large barn.....	56	11	..	 ¾ mile.
Near peak of large barn.....	134	51	..	 ¾ mile.
Near peak of house.....	162	28	..	 1½ miles.
Right corner of chimney of house.....	194	53	..	 ¼ mile.
Left peak of outhouse.....	321	08	..	 ¼ mile.

RITTER.

General locality.—Northern side of Island Creek about $2\frac{1}{4}$ miles from Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 120 yards north-northwest of nearest point of shore, 160 yards southwest by west of shore of small creek at lowest part of bank, 50 yards east of a wire fence, and 120 yards south of a fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Show" (N $50^{\circ} 41'$ E).....	0	00	00	$\frac{1}{4}$ mile.
Near peak of barn.....	17	51	..	$\frac{1}{2}$ mile.
Left corner of large chimney of house.....	22	44	..	$\frac{1}{2}$ mile.
Right corner of vine-covered chimney.....	66	25	..	$\frac{5}{8}$ mile.
Left side of tall chimney.....	179	43	..	1 mile.
Near peak of large barn.....	236	48	..	350 yards.
Left peak of long barn.....	317	43	..	$\frac{3}{4}$ mile.

SHOW.

General locality.—Northern shore of upper Island Creek on a point of land between two coves about $2\frac{3}{4}$ miles east of Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is about 9 feet above high water, 6 yards northwest of top of bank, and 35 yards east by north of a large cherry tree in clump of large trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Kit" (S $33^{\circ} 29'$ E).....	0	00	00	$\frac{1}{8}$ mile.
Nail in blaze in locust tree (5 inches diameter).....	19	01	30	7.98 meters.
Nail in blaze in locust tree (5 inches diameter).....	66	41	00	16.48 meters.
Left peak large house.....	204	52	..	$\frac{1}{4}$ mile.
Left corner of house.....	300	27	..	$\frac{3}{8}$ mile.
Nail in blaze in locust tree (4 inches diameter).....	311	32	..	10.13 meters.
Right corner of vine-covered house.....	348	00	..	$\frac{1}{2}$ mile.

KIT.

General locality.—Southeastern shore of Island Creek on a prominent point extending into a bend in the creek about $2\frac{3}{4}$ miles from Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated land about 8 feet above high water, 13 yards east of top of bank at trees, 20 yards southeast of point of bank, and 30 yards south of top of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Moke" (S $46^{\circ} 04'$ W).....	0	00	00	$\frac{1}{4}$ mile.
Nail in blaze in oak tree (8 inches diameter).....	32	44	00	11.27 meters.
Nail in blaze in oak tree (10 inches diameter).....	48	48	50	11.73 meters.
Right peak of large house.....	116	07	..	$\frac{1}{2}$ mile.
Right peak of barn.....	184	27	..	$\frac{3}{8}$ mile.
Right corner of vine-covered house.....	262	41	..	$\frac{3}{8}$ mile.
Nail in blaze in oak tree (5 inches diameter).....	328	59	30	14.97 meters.

MOKE.

General locality.—Northern shore of Island Creek on a prominent point extending into a bend in the creek, about $2\frac{1}{2}$ miles from Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in a pasture about 8 feet above high water, 23 yards northwest of edge of bank, 100 yards northeast of edge of bank at point, and 100 yards southeast of edge of bank at cedar tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Poco" (S $74^{\circ} 55'$ W).....	0	00	00	$\frac{1}{4}$ mile.
Right corner of large chimney.....	27	28	..	$\frac{3}{4}$ mile.
Left corner of Ritter house.....	51	23	..	$\frac{1}{4}$ mile.
Left peak of large house.....	107	01	..	$\frac{3}{4}$ mile.
Nail in blaze in locust tree (6 inches diam- eter).....	199	04	00	29.58 meters.
Left peak of large barn.....	208	51	..	$\frac{1}{2}$ mile.
Nail in blaze in locust tree (4 inches diam- eter).....	209	47	10	34.39 meters.
Nail in blaze in locust tree (5 inches diam- eter).....	270	56	40	22.86 meters.

POCO.

General locality.—Southern shore of upper Island Creek on point about $2\frac{1}{4}$ miles from Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated field about 9 feet above high water, 70 yards east-southeast of shore at low bank, 80 yards south by east of edge of bank, 100 yards west of a point of bank, and 130 yards south by west of a point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Healey" (S $74^{\circ} 26'$ W).....	0	00	00	$\frac{1}{4}$ mile.
Windmill on wooden tower.....	35	36	..	$\frac{1}{8}$ mile.
Left corner of chimney at left end of house..	246	15	..	$\frac{1}{2}$ mile.
Peak of ell of house.....	318	08	..	$\frac{5}{8}$ mile.
Left peak of barn.....	331	48	..	$\frac{1}{2}$ mile.
Left peak of building.....	346	40	..	$\frac{5}{8}$ mile.

HEALEY.

General locality.—Southern shore of Island Creek at west side of entrance to a cove, about $1\frac{1}{8}$ miles from Choptank River. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated field about 10 feet above high water, 11 yards west-southwest of bank fringed with trees, and 150 yards south of a point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of tile pipe buried with top 2 inches below base of monument..

References.—

	°	'	"	
"Maslin" (S 53° 47' W).....	0	00	00	 ¾ mile.
Left peak of large barn.....	69	32	..	 ¾ mile.
Nail in blaze in oak tree (3 inches diameter)...	126	39	50	 15.68 meters
Peak of house at chimney.....	159	37	..	 ½ mile.
Nail in blaze in wild cherry tree (5 inches diameter).....	174	27	00	 9.89 meters.
Nail in blaze in wild cherry tree (5 inches diameter).....	231	16	00	 19.37 meters.
Near peak of barn.....	317	40	..	 ½ mile.
Right side of right chimney of house.....	356	06	..	 ¾ mile.

MASLIN.

General locality.—Southeastern side of Island Creek about 1½ miles northeast of Choptank River entrance to creek. (See Charts No. 34 and 35.)

Immediate locality.—Observed station is about 8 feet above high water, 95 yards southeast of shore near rail fence, 30 yards north by west of quarter buildings, 9 yards west of fence corner, 6 yards north-west by west of wire fence, 7 yards southwest by west of wire fence, and 25 yards northwest by north of a graveyard.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Mean" (S 37° 19' W).....	0	00	00	 ¼ mile.
Spindle on barn cupola.....	48	25	..	 ⅝ mile.
Left peak of barn.....	160	18	..	 ½ mile.
Left corner of house.....	294	59	..	 68 yards.
Nail in blaze in walnut tree (3 feet in diameter).....	308	17	00	 12.82 meters.
Near corner of brick outhouse.....	338	37	40	 21.38 meters.

MEAN.

General locality.—Southern shore of Island Creek on a point at north side of entrance to a south fork of creek, about 1¼ miles east-northeast of Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated land about 5 feet above high water, 13 yards east of edge of bank, 10 yards north of line of trees at edge of bank, and 12 yards northeast of point of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 77° 07' W).....	0	00	00	 2¾ miles.
Spindle on barn cupola.....	39	34	..	 ½ mile.
Near peak of house.....	80	17	..	 ½ mile.
Near peak of barn.....	206	41	..	 ⅝ mile.
Nail in blaze in cherry tree (3 inches diameter).....	241	53	40	 13.48 meters.
Nail in blaze in locust tree (3 inches diameter).....	286	16	40	 8.12 meters.
Nail in blaze in locust tree (3 inches diameter).....	334	39	20	 12.35 meters.

JAY.

General locality.—Southern shore of Island Creek about 1 mile east of Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in northeast corner of cultivated field about 5 feet above high water, 3 yards southwest of point of bank, 3 yards south-southeast of edge of bank, 3 yards west-southwest of edge of bank, and 30 yards east-northeast of scattering trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 78° 47' E).....	0	00	00	2 3/4 miles.
Near peak of barn.....	40	38	..	7/8 mile.
Spindle on barn cupola.....	85	29	..	3/8 mile.
Near peak of house.....	103	54	..	3/4 mile.
Left corner of chimney outside left end of house.....	153	40	..	5/8 mile.
Left peak of barn.....	186	13	..	3/8 mile.
Near peak of large barn.....	284	23	..	1/2 mile.

BERRY.

General locality.—Southern shore of Island Creek on a prominent point about 1/2 mile east of Choptank River entrance to creek. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated land about 6 feet above high water, 17 yards south-southwest of edge of bank, 17 yards west-southwest of edge of bank, 21 yards southeast of edge of bank, 20 yards southeast of a small house, and 3 yards west of a line of four trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 79° 08' W).....	0	00	00	2 miles.
Right corner of house.....	23	03	..	1/2 mile.
Right corner of house.....	52	15	..	3/8 mile.
Nail in blaze in apple tree (8 inches diameter).....	100	30	10	14.62 meters.
Nail in blaze in apple tree (12 inches diameter).....	119	11	30	5.92 meters.
Spindle on barn cupola.....	139	01	..	1/2 mile.
Left peak on long barn.....	170	43	..	1 mile.
Near corner of house.....	233	42	..	18.33 meters.
Nail in blaze in apple tree (14 inches diameter).....	252	23	30	6.94 meters.
Right corner of house.....	282	07	..	5/8 mile.

LANDEYE.

General locality.—Northeastern shore of Choptank River on point at south side of entrance to Island Creek, about 1 1/2 miles east of Choptank River Light. (See Charts Nos. 34 and 35.)

Immediate locality.—Observed station is in cultivated land about 5 feet above high water, 15 yards east-southeast of edge of bank, 50 yards southwest of fringe of trees and bushes, 55 yards south-southwest of point of field and end of fringe of trees and bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (S 83° 39' W).....	0	00	00	1½ miles.
Chimney of house near Bachelors Point.....	48	33	..	1¼ miles.
Left corner of barn.....	122	21	..	¾ mile.
Left corner of barn.....	230	18	..	¾ mile.
"Large water tank".....	297	25	50	2¾ miles.

CHOPTANK RIVER LIGHT.

General locality.—In Choptank River about 1¼ miles southeast of Benoni Point, 1 mile south of entrance to Tred Avon River, and 8¼ miles east of Blackwalnut Point. (See Charts Nos. 34, 35, and 37.)

Immediate locality.—Observed station is on hexagonal screw-pile structure known as Choptank River Lighthouse.

Marks.—Observed station is center of lantern on Choptank River Lighthouse.

References.—

	°	'	"	
Chlora (S 57° 04' E).....	0	00	00	2¾ miles.

ST. MICHAELS P. E. CHURCH SPIRE.

General locality.—Western side of Miles River in town of St. Michaels at southeast corner of Talbot and Mill Streets. (See Chart No. 34.)

Immediate locality.—Observed station is on stone edifice known as St. Michaels Protestant Episcopal Church.

Marks.—Observed station is center point of steeple on St. Michaels Protestant Episcopal Church.

References.—None necessary.

MARGO.

General locality.—Northeastern shore of Miles River, about 1¼ miles north-northwest of Long Point and 2 miles east of St. Michaels. (See Chart No. 34.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 30 yards north of edge of marsh, 35 yards east of extreme point, and 55 yards west of bushes at edge of marsh. Cedar stub marking old triangulation station "Marengo 1899" is at edge of marsh, 29.61 meters S 57° 11' W of observed station.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument. Reference station "Marengo 1899" is center of five copper nails in top of 5-inch cedar stub 5 feet long with top flush with the surface of the ground.

References.—

	°	'	"	
"St. Michaels Water Tank" (N 86° 02' W)....	0	00	00	2¾ miles.
Right chimney of Fogg house.....	8	04	..	1¾ miles.
Peak of near gable of house.....	17	01	..	2 miles.
Weather vane on square tower on Dodson house.....	37	54	..	2 miles.
Right tangent of point.....	46	46	..	3¼ miles.
Persimmon tree.....	72	03	..	120 yards.
Left of trees on narrowest part of Long Point..	202	46	..	¾ mile.
Near peak of large house with large square chimney.....	288	29	..	1¼ miles.
Large square chimney on Dodson tenant house.....	298	21	..	1 mile.
"Marengo, 1899".....	323	12	50	29.61 meters.
Spindle on M. E. Church cupola.....	354	51	..	2 miles.
"St. Michaels P. E. Church spire".....	355	53	20	2 miles.

GIBBS.

General locality.—Northeastern shore of Miles River about $\frac{1}{2}$ mile northwest of extreme end of Long Point, and $1\frac{1}{4}$ miles south-southeast of entrance to Leeds Creek. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 17 yards north of shore, 25 yards east of shore, 20 yards northeast of extreme end of point, 35 yards west-northwest of point of woods, and 35 yards southwest of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Long" (S 44° 29' E).....	0	00	00	 $\frac{1}{2}$ mile.
Chimney on side of roof of large building....	21	03	..	 $1\frac{3}{4}$ miles.
West peak of long building.....	33	20	..	 $1\frac{3}{4}$ miles.
Southeast chimney of house.....	61	44	..	 1 mile.
Chimney outside of northeast end of Slater house.....	102	28	..	 1 mile.
Near peak of Leonard house.....	134	31	..	 $1\frac{1}{2}$ miles.
"St. Michaels Water Tank".....	151	57	40	 $2\frac{3}{8}$ miles.
Right chimney of house.....	171	17	..	 3 miles.
Weather vane on Dodson house.....	181	10	..	 $2\frac{3}{4}$ miles.
Right tangent of Tilghman Point.....	191	41	..	 $7\frac{1}{4}$ miles.
Left tangent of Fairview Point.....	192	55	..	 2 miles.
Nail in blaze in pine tree.....	265	45	40	 44.35 meters.
Nail in blaze in pine tree.....	301	38	50	 29.15 meters.
Nail in blaze in pine tree.....	327	58	40	 30.44 meters.

LONG.

General locality.—Northern shore of Miles River on Long Point about $\frac{1}{8}$ mile southwest of entrance to Hunting Creek, and $1\frac{1}{4}$ miles north of railroad bridge across entrance to Oak Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cedar and pine woods about 6 feet above high water, 10 yards east-southeast of edge of bank protected by log breakwater, 11 yards northeast of point of bank, 4 yards northwest of edge of bank, and 30 yards northwest of point of sandy marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hunting" (N 56° 23' E).....	0	00	00	 $\frac{1}{2}$ mile.
Nail in blaze in cedar tree (8 inches diameter).....	6	25	00	 4.45 meters.
Left peak of roof of house.....	23	21	..	 $1\frac{3}{8}$ miles.
Spindle on barn cupola.....	103	47	..	 $1\frac{1}{8}$ miles.
Smoke pipe of Royal Oak railroad station....	131	37	..	 $1\frac{1}{8}$ miles.
Nail in blaze in cedar tree (6 inches diameter).....	181	35	10	 2.53 meters.
"St. Michaels Water Tank".....	235	36	40	 3 miles.
Nail in blaze in twin cedar tree (16 inches diameter).....	286	15	30	 4.47 meters.
Left corner of roof of house.....	358	32	..	 $\frac{5}{8}$ mile.

BEG.

General locality.—Southwestern shore of Hunting Creek on first prominent point north of Miles River entrance to Hunting Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in scant pine woods about 5 feet above high water, 3 yards south of bank, 9 yards northwest of bank, and 11 yards west of point of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Search" (N 20° 58' W).....	0	00	00	3/8 mile.
Spindle on barn cupola.....	10	11	..	7/8 mile.
Nail in blaze in pine tree (10 inches diameter).....	22	49	50	2.34 meters.
Front peak of large house.....	46	16	..	3/8 mile.
Peak of near gable of house.....	90	13	..	1/2 mile.
Left peak of roof of house.....	108	29	..	1 1/4 miles.
Nail in blaze in pine tree (7 inches diameter).....	164	32	30	2.97 meters.
Nail in blaze in pine tree (2 inches diameter).....	240	49	10	2.23 meters.

SEARCH.

General locality.—Western shore of Hunting Creek about 1/2 mile north of Miles River. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 11 yards northwest of shore, 40 yards south-southwest of shore, 35 yards west-southwest of point of shore, 3 yards east of water bushes, 20 yards south of bushes, and 25 yards southwest of water bushes.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tug" (N 50° 43' E).....	0	00	00	1/4 mile.
Spindle on barn cupola.....	47	45	..	1/2 mile.
Lightning rod on house.....	52	01	..	3/8 mile.
Peak of front gable of house.....	74	09	..	1 1/4 miles.
Nail in blaze in pine tree (14 inches diameter).....	154	11	10	16.62 meters.

TUG.

General locality.—Eastern shore of Hunting Creek about 1/2 mile north of Miles River. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 6 feet above high water, 10 yards east of edge of bank, 32 yards north of extreme point of shore, 7 yards northeast of a shanty, 14 yards northwest of shore, and trees along shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hunting" (S 33° 40' E).....	0	00	00	1/2 mile.
Nail in blaze in cedar tree (4 inches diameter).....	20	41	00	7.74 meters.
Left corner of shanty.....	53	38	..	7.47 meters.
Right corner of shanty.....	83	08	..	6.64 meters.
"St. Michaels Water Tank".....	132	29	00	3 miles.
Left corner of house behind very large oak tree.....	185	12	..	1/4 mile.
Left peak of ell of house.....	272	52	..	1/4 mile.
Nail in blaze in birch tree (5 inches diameter).....	288	04	00	18.48 meters.
Nail in blaze in birch tree (9 inches diameter).....	304	51	10	12.84 meters.
Right peak of barn with cupola.....	350	50	..	3/8 mile.

HUNTING.

General locality.—Northwestern shore of Miles River on east side of entrance to Hunting Creek and $\frac{1}{2}$ mile northeast of Long Point. (See Chart No. 34.)

Immediate locality.—Observed station is in south corner of cultivated field, about 5 feet above high water, 2 yards northwest of edge of bank with bushes, 6 yards west of edge of bank, 7 yards northeast of point of bank, 50 yards north of edge of lower land, and 200 yards south of a large barn with a cupola.

Marks.—Observed station is center point of triangle on standard cement ground projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	''	
"Spree" (N 79° 09' E).....	0	00	00	 $\frac{1}{4}$ mile.
Left peak of house.....	3	42	..	 1 mile.
Near peak of large barn.....	46	35	..	 $\frac{3}{4}$ mile.
Nail in blaze in persimmon tree (6 inches diameter).....	100	17	50	 5.87 meters.
Spindle on barn cupola.....	105	03	..	 $1\frac{1}{2}$ miles.
Left peak of building near railroad bridge....	119	46	..	 $1\frac{1}{2}$ miles.
Left tree on Long Point.....	154	17	..	 $\frac{1}{2}$ mile.
Near peak of large building.....	240	35	..	 $1\frac{1}{2}$ miles.
Spindle on barn cupola.....	271	29	..	 200 yards.
Peak of near gable on house.....	337	27	..	 $\frac{1}{4}$ mile.
Nail in blaze in cherry tree (3 inches diameter) 339	21	10	.....	7.98 meters.

SPREE.

General locality.—Northwestern shore of Miles River, about $\frac{1}{2}$ mile east of entrance to Hunting Creek, and $\frac{3}{4}$ mile northeast of Long Point. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 2 yards north of shore, 15 yards west-southwest of wire fence, and 25 yards south of trees. Cement monument marking reference station is 10.57 meters N 2° 18' E of observed station and on line with cherry tree.

Marks.—Observed station is center of 2-inch tile pipe with top flush with surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	''	
"Whit" (N 60° 48' E).....	0	00	00	 $\frac{1}{2}$ mile.
Left corner of boathouse.....	1	07	..	 $\frac{1}{4}$ mile.
Near corner of large house.....	3	50	..	 1 mile.
Left peak of roof of house.....	38	17	..	 $\frac{5}{8}$ mile.
Spindle on barn cupola.....	115	26	..	 $\frac{3}{4}$ mile.
Spindle on barn cupola.....	135	22	..	 $\frac{1}{8}$ mile.
Left corner of roof of house.....	166	42	..	 2 miles.
Nail in blaze in hackberry tree (5 inches diameter).....	265	58	00	 22.08 meters.
Nail in blaze in cherry tree (6 inches diameter).....	300	33	..	 23.17 meters.
REFERENCE STATION.....	301	30	30	 10.57 meters.
Right peak of colonial house.....	354	15	..	 $\frac{1}{4}$ mile.
Nail in blaze in fence post.....	358	52	30	 15.04 meters.

WHIT.

General locality.—Northwestern shore of Miles River on east side of entrance to a small cove about $1\frac{1}{4}$ miles northeast of Long Point. (See Chart No. 34.)

Immediate locality.—Observed station is on a small marsh point near a small clump of cedar and hackberry trees about 1 foot above high water, 5 yards northwest of shore, 4 yards northeast of shore, and 6 yards north of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Dorrance" (N $25^{\circ} 25'$ E).....	0	00	00	$\frac{3}{8}$ mile.
Nail in blaze in leaning hackberry tree (4 inches diameter).....	2	56	10	8.07 meters.
Left corner of house.....	6	39	..	$\frac{5}{8}$ mile.
Center of windmill tower.....	19	49	..	$1\frac{5}{8}$ miles.
Center of windmill tower.....	32	32	..	$1\frac{5}{8}$ miles.
Near peak of house.....	42	55	..	$\frac{5}{8}$ mile.
Left peak of roof of house.....	126	31	..	$\frac{3}{8}$ mile.
Left corner of square house.....	186	34	..	1 mile.
Left corner of roof of house.....	220	51	..	$\frac{1}{4}$ mile.
Near peak of large house.....	257	19	..	$\frac{3}{4}$ mile.
Nail in blaze in twin hackberry tree (20 inches diameter).....	291	51	40	4.49 meters.
Nail in blaze in hackberry tree (5 inches diameter).....	325	35	10	4.98 meters.
Near peak of Dorrance house.....	356	02	..	$\frac{3}{8}$ mile.

DORRANCE.

General locality.—Northwestern shore of Miles River about $1\frac{3}{8}$ miles southwest of Miles River bridge and $1\frac{5}{8}$ miles northeast of Long Point. (See Chart No. 34.)

Immediate locality.—Observed station is about 5 feet above high water, 2 yards northwest of edge of bank, 9 yards west-southwest of a large tree on point of bank, 11 yards west of point of bank, and 12 yards southwest of edge of bank.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe, buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Tang" (N $40^{\circ} 20'$ E).....	0	00	00	$\frac{1}{4}$ mile.
Center of windmill tower.....	9	59	..	$1\frac{3}{8}$ miles.
Left corner of large house.....	18	06	..	2 miles.
Near corner of Henderson house.....	24	22	..	$1\frac{3}{8}$ miles.
Center of windmill on tower.....	25	18	..	$1\frac{3}{8}$ miles.
Nail in blaze in hickory tree (20 inches diameter).....	27	42	50	8.58 meters.
Spindle on barn cupola.....	62	42	..	$\frac{1}{2}$ mile.
Right peak of house.....	70	39	..	$\frac{3}{8}$ mile.
Near peak of house.....	136	04	..	$\frac{3}{4}$ mile.
Nail in blaze in hickory tree (18 inches diameter).....	153	18	00	5.79 meters.
Right corner of house.....	207	10	..	300 yards.
Left peak of small tenant house.....	259	04	..	300 yards.
Near corner of Dorrance house.....	328	55	..	300 yards.
Right corner of house.....	355	57	..	$\frac{1}{2}$ mile.

TANG.

General locality.—Northwestern shore of Miles River at south side of entrance to a cove, about $1\frac{1}{2}$ miles southwest of Miles River bridge. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh point about 1 foot above high water, 20 yards northwest of shore, 25 yards north of point of shore, 35 yards west-southwest of another point of shore, and 150 yards southeast of wire fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Johnson" (N 40° 46' E)	0	00	00	 $\frac{1}{4}$ mile.
Center of windmill tower	12	31	..	 $\frac{3}{4}$ mile.
Right eave of Goldsborough house	21	26	..	 $1\frac{1}{2}$ miles.
Center of windmill tower	31	37	..	 $1\frac{1}{2}$ miles.
Near corner of large chimney of mansion	48	50	..	 1 mile.
Right peak of Mumford house	119	57	..	 $\frac{3}{8}$ mile.
Near peak of roof	149	05	..	 $\frac{7}{8}$ mile.
Near peak of Dorrance house	193	47	..	 $\frac{1}{4}$ mile.
Near peak of house	288	44	..	 $\frac{1}{4}$ mile.
Right corner of house	351	46	..	 $\frac{1}{4}$ mile.

BETHEL.

General locality.—Southeastern shore of Miles River at north side of entrance to a small creek, about $\frac{3}{4}$ mile southwest of Miles River bridge. (See Chart No. 34.)

Immediate locality.—Observed station is in a clump of pine trees about 3 feet above high water, 9 yards south of shore of rounded point, and 20 yards east of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Figs" (S 38° 40' W)	0	00	00	 $\frac{3}{8}$ mile.
Near peak of Dorrance house	36	02	..	 $\frac{3}{4}$ mile.
Nail in blaze in cedar tree (14 inches diameter)	56	38	00	 5.76 meters.
Left corner of second story of Lowndes house	87	26	..	 $\frac{3}{8}$ mile.
Nail in blaze in persimmon tree (6 inches diameter)	125	54	30	 4.91 meters.
Center of windmill on tower	173	33	..	 $\frac{1}{2}$ mile.
Left corner of Goldsborough house	174	39	..	 1 mile.
Nail in blaze in locust tree (10 inches diameter)	197	25	40	 4.74 meters.
Center of windmill on tower	205	39	..	 $\frac{3}{8}$ mile.
Left corner of large chimney	267	50	..	 $\frac{1}{2}$ mile.

FIG.

General locality.—Southeastern shore of Miles River, about 1 mile southwest of Miles River bridge. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 12 feet above high water, 4 yards southeast of edge of tree-covered bank, and 150 yards north-northwest of large barn with two cupolas.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Doctor" (S 51° 35' W).....	0	00	00	 ¼ mile.
Near peak of house.....	33	44	..	 ⅝ mile.
Nail in blaze in hackberry tree.....	35	07	10	 8.66 meters.
Left corner of Dorrance house.....	52	05	..	 ½ mile.
Nail in blaze in cedar tree (4 inches diameter).....	111	57	20	 9.39 meters.
Spindle on cupola on hip roof on house.....	149	46	..	 ¾ mile.
Center of windmill on tower.....	162	56	..	 ¾ mile.
Point of tower on house.....	166	12	..	 ¾ mile.
Left corner of Henderson house.....	182	21	..	 1 mile.
Center of windmill on tower.....	183	42	..	 1 mile.
Near peak of tenant house.....	209	37	..	 ¼ mile.
Spindle on left one of two cupolas on barn....	289	54	..	 150 yards.
Near peak of large barn.....	333	00	..	 ¼ mile.
Nail in blaze in oak tree (8 inches diameter)...	354	32	00	 19.14 meters.

DOCTOR.

General locality.—Southeastern shore of Miles River, about 1¼ miles west-southwest of Miles River bridge and 1¾ miles northeast by east of Long Point. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land back of bushes about 4 feet above high water, 4 yards southeast of edge of bank, 55 yards southwest of a wire fence, 80 yards west of corner of wire fence, 100 yards west by south of a house, and 100 yards west-southwest of a marsh point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"McConnell" (S 31° 17' W).....	0	00	00	 ¼ mile.
Spindle on barn cupola.....	3	57	..	 ¾ mile.
Near peak of house.....	36	41	..	 ⅝ mile.
Peak of house.....	113	30	..	 ¾ mile.
Nail in blaze in bush (3 inches diameter)....	136	19	00	 6.66 meters.
Nail in blaze in apple tree (8 inches diameter).....	154	11	30	 17.93 meters.
Left corner of house.....	159	17	..	 ½ mile.
Center of tower.....	186	31	..	 1½ miles.
Left corner of shed.....	213	28	..	 100 yards.
Nail in blaze in fence post.....	228	15	50	 71.35 meters.
Right peak of large barn.....	344	54	..	 ⅝ mile.
Near peak of roof of house.....	350	02	..	 ⅝ mile.

McCONNELL.

General locality.—Southeastern shore of Miles River, near west side of entrance to a small cove about 1½ miles east-northeast of Long Point and 1¾ miles southwest of Miles River bridge. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 6 feet above high water, 15 yards southeast of edge of bank, 20 yards south of point of bank, and 40 yards west of edge of field at trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Kirk" (S 51° 55' W).....	0	00	00	 ⅝ mile.
Left peak of roof of house.....	3	39	..	 2½ miles.
Left peak of large house.....	28	52	..	 ¾ mile.
Front peak of house.....	45	04	..	 ¼ mile.
"St. Michaels Water Tank".....	46	40	20	 4¼ miles.
Spindle on barn cupola.....	114	02	..	 ½ mile.

References—Continued.

	°	'	"	
Left corner of plastered house.....	120	37	..	1/2 mile.
Right corner of large house.....	145	16	..	3/8 mile.
Right corner of house.....	169	12	..	3/8 mile.
Nail in blaze in cherry tree (5 inches diameter).....	190	40	30	39.78 meters.
Nail in blaze in cherry tree (8 inches diameter).....	213	24	40	37.57 meters.
Nail in blaze in cherry tree (10 inches diameter).....	237	57	00	53.92 meters.
Right peak of barn.....	311	22	..	1/4 mile.

KIRK.

General locality.—Southeastern shore of Miles River, between two creeks about 1 mile east of Long Point. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field, 7 feet above high water, 15 yards south-east of edge of bank, 35 yards west-southwest of point of bank covered with trees, and 40 yards west-northwest of a large sycamore tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ham" (S 42° 29' W).....	0	00	00	1/2 mile.
Near peak of large house.....	5	30	..	1 3/4 miles.
Left corner of large house.....	76	08	..	1/2 mile.
Highest near peak of house.....	94	49	..	3/8 mile.
Right front peak of large house.....	135	52	..	3/8 mile.
Nail in blaze in cedar tree (6 inches diameter).....	158	58	20	28.33 meters.
Left corner of large house.....	167	33	..	1 1/2 miles.
Center of windmill tower.....	178	17	..	2 1/2 miles.
Spindle on right barn cupola.....	189	36	..	3/4 mile.
Nail in blaze in cedar tree (5 inches diameter).....	203	16	10	37.05 meters.
Left peak of roof of large house.....	213	58	..	3/8 mile.
Nail in blaze in sycamore tree (3 feet diameter).....	234	24	30	34.98 meters.
Spindle on barn cupola.....	346	07	..	1/2 mile.
Left corner of square house.....	355	12	..	1/2 mile.

HAM.

General locality.—Southeastern shore of Miles River, about 3/4 mile east-southeast of Long Point, 1/2 mile southeast of entrance to Hunting Creek, and 1/2 mile northeast of entrance to Newcomb Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated land about 6 feet above high water, 12 yards south-southeast of edge of bank, 20 yards west-southwest of wooden fence at orchard, 65 yards north-northwest of fence at road, 70 yards west-northwest of large, square house, and 70 yards north-west of corner of fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

Survey of Oyster Bars, Talbot County, Md.

References.—

	°	'	"	
"Comb" (S 29° 52' W).....	0	00	00	 ¾ mile.
Left peak of house.....	32	17	..	 1¾ miles.
Near peak of large house.....	62	08	..	 1¾ miles.
"St. Michaels P. E. Church spire".....	80	30	50	 3½ miles.
"St. Michaels Water Tank".....	82	09	20	 3¾ miles.
Near peak of house.....	113	17	..	 1¾ miles.
Left corner of house.....	146	00	..	 ¾ mile.
Front peak of large colonial house.....	175	06	..	 ¾ mile.
Nail in blaze in fence post.....	187	33	20	 17.32 meters.
Near corner of large house.....	195	43	..	 3 miles.
Nail in blaze in cherry tree (24 inches diameter).....	230	54	00	 21.67 meters.
Left corner of house.....	250	47	..	 73 yards.
Nail in blaze in cherry tree (24 inches diameter).....	255	51	50	 36.78 meters.
Spindle on barn cupola.....	305	51	..	 ¾ mile.
Large, long sycamore tree.....	359	17	..	 ¼ mile.

COMB.

General locality.—Southeastern shore of Miles River about ¼ mile north of entrance to Newcomb Creek and ¾ mile northeast of railroad bridge across entrance to Oak Creek. (See Chart No. 34.)

Immediate locality.—Observed station is in cultivated field about 6 feet above high water, 35 yards southeast of edge of bank, 30 yards east of edge of bank, 45 yards north of edge of bank on range with point, and 300 yards southwest of large lone sycamore tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above the surface of the ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hall" (S 42° 06' W).....	0	00	00	 ¾ mile.
Left peak of house.....	31	22	..	 1½ miles.
"St. Michaels Water Tank".....	75	56	30	 3½ miles.
Chimney outside of left end of Fogg cottage..	80	56	..	 3½ miles.
Weather vane on tower of Dodson house.....	95	57	..	 4 miles.
Cupola on barn.....	122	11	..	 1½ miles.
Left corner of house.....	146	52	..	 1 mile.
Large lone sycamore tree.....	168	36	..	 300 yards.
Windmill in range with house.....	187	18	..	 1¼ miles.
Stack of cannery.....	317	48	..	 ¾ mile.
Spindle on barn cupola.....	325	59	..	 ¼ mile.

HALL.

General locality.—Southern shore of Miles River about 100 yards west of west end of railroad trestle across entrance to Oak Creek, and 100 yards east of Royal Oak railway station. (See Chart No. 34.)

Immediate locality.—Observed station is in marsh about 1 foot above high water, 30 yards southwest of shore, 40 yards south of shore, 85 yards south-northwest of shore at corner of shed, and 35 yards north-northeast of near rail of railway track.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above the surface of the ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Barnett" (N 39° 14' W).....	0	00	00	¾ mile.
Center of tower on Dodson house.....	7	37	..	4⅞ miles.
Chimney of middle of Hall Building.....	28	03	..	2⅞ miles.
Near chimney of Speck house.....	62	40	..	1⅞ miles.
Chimney of Dorrance house.....	71	47	..	2⅞ miles.
Chimney on southeast end of house.....	108	32	..	½ mile.
Left tangent of shed.....	147	08	..	85 yards.
Northwest peak of barn.....	165	55	..	¼ mile.
North peak of Kirby house.....	234	38	..	½ mile.
Chimney of house.....	281	37	..	¼ mile.
Chimney on railroad station.....	299	12	..	100 yards.
Left chimney of house.....	330	38	..	¼ mile.

BARNETT.

General locality.—Southern shore of Miles River about ¾ mile northwest of entrance to Oak Creek, and ⅞ mile southeast of entrance to Spencers Cove. (See Chart No. 34.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 9 yards southwest of shore, 12 yards northwest of shore, 18 yards west-northwest of extreme end of point, and 8 yards north-east of foot of a bank 6 feet high.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Maiden" (N 26° 26' W).....	0	00	00	½ mile.
Cupola of Rieman barn.....	16	16	..	2⅞ miles.
Left chimney of Hall house.....	25	57	..	2 miles.
Near chimney of house.....	76	47	..	1½ miles.
Windmill.....	85	05	..	2 miles.
Left chimney of house.....	93	46	..	2 miles.
Near chimney of square roof house.....	102	21	..	1⅞ miles.
Spindle on cupola on barn.....	140	28	..	1 mile.
Southwest peak of barn.....	162	36	..	⅞ mile.
Nail in blaze in oak tree (26 inches diameter).....	177	12	50	9.22 meters.
Nail in blaze in cedar tree (8 inches diameter).....	228	16	40	5.04 meters.
Nail in blaze in pine tree (16 inches diameter).....	256	11	20	10.29 meters.

MAIDEN.

General locality.—Southwestern shore of Miles River about ½ mile west of Long Point and 2½ miles southeast of St. Michaels. (See Chart No. 34.)

Immediate locality.—Observed station is just outside of a fringe of trees near a small marsh skirting the shore on a point about 3 feet above high water, 3 yards south of shore, 5 yards northeast of foot of bank, 7 yards east of point of bank. Cement monument marking reference station is 4.34 meters S 16° 57' W of observed station. Stone monument marking "Miles River" (1899) is 38.22 meters S 48° 29' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. New reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Old triangulation station (Miles River, 1899) is center of cross lines on 6-inch square top stone monument.

References.—

	°	'	"	
"Stony" (N 48° 53' W).....	0	00	00	7/8 mile.
Right chimney of house.....	5	01	..	2 3/8 miles.
Weather vane on Dodson house.....	18	25	..	2 7/8 miles.
Left tangent of woods on Fairview Point....	32	34	..	2 1/2 miles.
Cupola on Rieman barn.....	42	46	..	2 miles.
Northwest chimney of house.....	55	21	..	1 5/8 miles.
Weather vane on barn cupola.....	69	32	..	1 3/4 miles.
North chimney of house.....	128	13	..	2 1/4 miles.
Large square chimney on old house.....	143	04	..	1 1/2 miles.
"Miles River 1899," stone monument.....	180	24	00	38.22 meters.
Chimney on near side of roof of large building.	190	48	..	1 3/8 miles.
West peak of large building near draw.....	198	07	..	1 3/8 miles.
REFERENCE STATION (cement monument)...	245	50	40	4.34 meters.
Nail in blaze in cherry tree (22 inches diam- eter).....	259	04	50	4.86 meters.
Nail in blaze in cedar tree (5 inches diam- eter).....	310	27	20	3.37 meters.
Nail in blaze in cedar tree (8 inches diam- eter).....	335	15	20	3.73 meters.
Chimney of Slater house.....	353	23	..	3/4 mile.

STONY.

General locality.—Southwestern shore of Miles River on point at east side of entrance to Spencer Cove about 1 1/4 miles southeast of St. Michaels. (See Chart No. 34.)

Immediate locality.—Observed station is in clump of large oak and birch trees about 8 feet above high water, 14 yards south of shore, 16 yards south-southwest of a point and 12 yards west of another point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe with top 2 inches below base of monument.

References.—

	°	'	"	
"Millwind" (N 31° 16' W).....	0	00	00	1 1/2 miles.
Weather vane on tower of Dodson house....	7	41	..	2 1/4 miles.
Near peak of cupola on Rieman barn.....	50	21	..	1 5/8 miles.
Peak of west gable of Hall house.....	63	47	..	1 3/8 miles.
Spindle on cupola of house.....	80	10	..	1 3/4 miles.
Tangent of trees.....	162	22	..	1/4 mile.
Nail in blaze in white oak tree (9 inches diameter).....	213	25	20	4.51 meters.
Nail in blaze in holly tree (13 inches diam- eter).....	242	33	00	9.43 meters.
Nail in blaze in pine tree (10 inches diam- eter).....	317	04	10	12.34 meters.
Flagstaff on water tank.....	334	33	..	1 1/2 miles.
Left chimney of house.....	342	59	..	1 5/8 miles.

CHLORA.

General locality.—Northeastern shore of Choptank River, on Chlora Point, about 1 1/2 miles south-southeast of entrance to Island Creek, 1 1/2 miles northwest of entrance to La Trappe Creek, and 2 3/8 miles southeast of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is about 8 feet above high water, 6 yards east-northeast of edge of bank, 9 yards south of wire fence, and 18 yards north of edge of bank at walnut tree. Cement monument marking reference station is 6.91 meters N 78° 43' E of observed station.

Marks.—Observed station is hole in center of cement-filled tile pipe 4 inches diameter with top about 2 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above the surface of the ground.

<i>References.</i> —	°	'	"	
"Choptank River Light" (N 57° 03' W)	0	00	00	2 3/8 miles.
Nail in blaze in wild-cherry tree (3 inches diameter)	74	39	10	3.11 meters.
Nail in blaze in cedar tree (4 inches diameter)	129	31	00	9.01 meters.
REFERENCE STATION	135	46	10	6.91 meters.
Nail in blaze in walnut tree (14 inches diameter)	220	12	10	16.70 meters.
Near peak of house	254	53	..	3 miles.
Spindle on cupola	267	24	..	2 3/8 miles.
"Large Water Tank"	294	46	30	1 1/2 miles.

TRAPPE.

General locality.—Northern shore of Choptank River, at west side of entrance to La Trappe Creek, about 1 1/2 miles southeast of Chlora Point. (See Chart No. 35.)

Immediate locality.—Observed station is on grassy gravel point about 3 feet above high water, 4 yards north of shore, 6 yards east-northeast of shore, and 17 yards south by east of large cedar tree. Cement monument marking reference station is 12.62 meters N 47° 40' E of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 2 inches above surface of ground.

<i>References.</i> —	°	'	"	
"Lan" (N 25° 07' E)	0	00	00	1/2 mile.
Cedar tree	11	05	..	35 yards.
Red beacon	06	50	00	1/4 mile.
Right chimney of house	130	16	..	3 miles.
"Black Beacon"	145	54	40	1/4 mile.
Northerly peak of Travers Wharf house	196	15	..	2 7/8 miles.
Center of smaller water tank	241	02	..	2 3/8 miles.
"Large Water Tank"	241	44	30	2 3/8 miles.
Nail in blaze in cedar tree (20 inches diameter)	294	50	50	7.23 meters.
REFERENCE STATION	350	06	40	12.62 meters.
Nail in blaze in cedar tree (22 inches diameter)	353	23	40	15.99 meters.

LAN.

General locality.—Northwestern shore of La Trappe Creek, about 3/4 mile north of Choptank River. (See Chart No. 35.)

Immediate locality.—Observed station is on tree-fringed high land about 10 feet above high water, 8 yards southeast of shore, 85 yards north of shore, and 105 yards northeast of extreme end of point.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Rice" (N 60° 09' E).....	0	00	00	3½ mile.
Near peak of barn.....	16	13	..	¾ mile.
Chimney of abandoned house.....	41	40	..	¾ mile.
Chimney of 1½-story house.....	47	44	..	¾ mile.
Peak of metal-roofed barn.....	62	58	..	½ mile.
Chimney of house in trees.....	69	06	..	½ mile.
Nail in blaze in locust tree (4 inches diameter).....	185	07	30	12.46 meters.
"Large Water Tank" (Castlehaven).....	198	49	00	2⅞ miles.
Chimney on small house.....	235	52	..	¼ mile.
Nail in blaze in locust tree (6 inches diameter).....	292	39	00	26.39 meters.
Near peak of barn.....	336	14	..	¼ mile.

RICE.

General locality.—Northwestern shore of La Trappe Creek, about ¼ mile northeast of a wharf and ¾ mile north-northeast of Choptank River. (See Chart No. 35.)

Immediate locality.—Observed station is on tree-fringed cultivated land, about 3 feet above high water, 28 yards south of shore, 15 yards south of edge of marsh and cultivated land, and 50 yards west of a small creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Gis" (S 14° 38' W).....	0	00	00	¾ mile.
Nail in blaze in locust tree (5 inches diameter).....	12	23	30	21.00 meters.
Chimney between two 1-story houses.....	57	22	..	125 yards.
Near peak of barn.....	91	01	..	¼ mile.
Chimney of small house.....	205	01	..	150 yards.
Near peak of barn.....	254	34	..	¾ mile.
Nail in blaze in locust tree (5 inches diameter).....	255	54	40	19.23 meters.
Nail in blaze in locust tree (3 inches diameter).....	314	02	20	11.99 meters.

INEZ.

General locality.—Eastern shore of La Trappe Creek, on southwestern shore of a small cove about ¾ mile northeast of Choptank River. (See Chart No. 35.)

Immediate locality.—Observed station is on high land in pasture field about 10 feet above high water 3 yards south of edge of tree-fringed bank, and 125 yards northeast of small house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top about 2 inches below base of monument.

References.—

	°	'	"	
"Gis" (S 60° 27' W).....	0	00	00	⅝ mile.
Chimney of 1½-story house.....	3	22	..	125 yards.
Near peak of abandoned house.....	19	36	..	125 yards.
Nail in blaze in hackberry tree (3 inches diameter).....	41	31	20	11.11 meters.
Point of dairy roof.....	82	20	..	¼ mile.
Chimney of 1½-story house.....	87	28	..	¼ mile.
Peak of roof of small house.....	122	59	..	¼ mile.

References—Continued.

	°	'	"	
Peak of barn.....	130	00	..	7½ mile.
Nail in blaze in locust tree (4 inches diameter).....	151	19	40	3.44 meters.
Peak of barn.....	282	34	..	1½ mile.
Right chimney of house in trees.....	302	19	..	¼ mile.
"Black Beacon".....	339	49	40	7½ mile.

GIS.

General locality.—Southeastern shore of LaTrappe Creek, about ¼ mile south of a wharf, and ½ mile northeast of Choptank River. (See Chart No. 35.)

Immediate locality.—Observed station is on sand and marsh point about 1 foot above high water, 11 yards southeast of shore, 13 yards north of shore, 20 yards northeast of shore, and 30 yards north of high cultivated land.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Grubin" (S 20° 49' W).....	0	00	00	¾ mile.
"Black Beacon".....	14	34	50	¾ mile.
Red Beacon.....	20	09	30	¾ mile.
Chimney of house.....	93	09	..	½ mile.
Left chimney on house.....	149	29	..	¾ mile.
Chimney between two small houses.....	161	51	..	¼ mile.
Near peak of 1½-story house.....	180	36	..	¾ mile.

GRUBIN.

General locality.—Northern shore of Choptank River on east side of entrance to La Trappe Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on grassy marsh back of gravel beach, about 1 foot above high water, 13 yards east of shore, 13 yards south of shore, 20 yards southeast of extreme end of point, and 100 yards northwest of pond.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Howard" (S 1° 21' W).....	0	00	00	2¾ miles.
South peak of Travers Wharf house.....	45	02	..	3 miles.
"Black Beacon".....	51	56	10	¼ mile.
Center of smaller water tower.....	86	56	..	3 miles.
"Large water tank".....	87	49	30	2¾ miles.
Red Beacon.....	90	47	10	¼ mile.
South peak of shed.....	153	07	..	¾ mile.
Near peak of barn.....	181	58	..	¾ mile.
Nail in blaze in stump (7 inches diameter)....	194	47	40	12.17 meters.
Chimney of house.....	199	51	..	¾ mile.
Nail in blaze in cedar tree (5 inches diameter). 225	34	30	..	12.04 meters.

BLACK BEACON.

General locality.—Northeastern shore of Choptank River off entrance to LaTrappe Creek, about 1½ miles northeast of Horn Point. (See Chart No. 35.)

Immediate locality.—Observed station is on a cylindrical foundation known as LaTrappe Creek outer light.

Marks.—Observed station is center point of lantern on LaTrappe Creek outer light.

References.—None necessary.

HOWELLS.

General locality.—Northern shore of Choptank River on Howells Point about $1\frac{3}{4}$ miles east of Horn Point, 2 miles north of entrance to Jenkins Creek, and 2 miles northwest of Hambrooks Bar Beacon. (See Chart No. 35.)

Immediate locality.—Observed station is on a long grassy gravel point about 3 feet above high water, 50 yards south-southeast of old fish shanty and trees, 25 yards south of highest level part of land, 11 yards west of shore, 3 yards east of shore, and $\frac{1}{4}$ mile north of extreme end of point. Cement monument marking reference station is 22.82 meters N $17^{\circ} 53'$ E of observed station.

Marks.—Observed station is nail in center of cedar stub in center of 4-inch tile pipe with top of pipe 4 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Red" (N $78^{\circ} 26'$ E).....	0	00	00	$1\frac{3}{4}$ miles.
South peak of Kirby Wharf house.....	12	35	..	2 miles.
"Hambrooks Bar Beacon".....	44	16	50	2 miles.
Flagstaff on boathouse	57	19	..	$1\frac{5}{8}$ miles.
"Dicks Water Tank".....	62	22	10	$1\frac{3}{4}$ miles.
"Cambridge Standpipe".....	69	41	10	$3\frac{1}{4}$ miles.
Spindle on barn cupola.....	137	22	..	$1\frac{3}{4}$ miles.
"Large water tank".....	209	51	40	$3\frac{3}{8}$ miles.
"Black Beacon".....	251	22	20	$1\frac{1}{2}$ miles.
Nail in blaze in dead locust tree (15 inches diameter).....	285	21	50	9.83 meters.
Nail in blaze in locust tree (3 inches diameter).....	294	01	40	13.67 meters.
Nail in blaze in pin oak tree (11 inches diameter).....	297	59	10	27.28 meters.
REFERENCE STATION.....	299	26	40	22.82 meters.

RED.

General locality.—Northern shore of Choptank River at eastern side of Dickinsons Bay, about $1\frac{3}{4}$ miles east-northeast of Howells Point and $\frac{3}{4}$ mile northwest of Kirby Wharf. (See Chart No. 35.)

Immediate locality.—Observed station is on cultivated land on first high bluff upstream from Howells Point, about 12 feet above high water, 8 yards northeast of edge of bank, 10 yards north of edge of bank, and 10 yards east of edge of bank. Cement monument marking reference station is 23.65 meters N $89^{\circ} 58'$ E of observed station and almost on line with east chimney of house.

Marks.—Observed station is nail in stub in center of 2-inch tile pipe with top of pipe 6 inches below surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Hambrooks Bar Beacon" (S $3^{\circ} 39'$ E).....	0	00	00	$1\frac{3}{4}$ miles.
"Cambridge Standpipe".....	0	30	10	3 miles.
"Dicks Water Tank".....	19	34	50	$1\frac{3}{4}$ miles.
Center of silo tower.....	51	38	..	3 miles.
"Large Water Tank".....	102	32	50	$4\frac{1}{4}$ miles.
Near peak of barn with two cupolas.....	148	28	..	1 mile.
REFERENCE STATION.....	229	16	20	23.63 meters.
East chimney of house.....	229	38	..	$\frac{1}{4}$ mile.
Near peak of large barn.....	282	07	..	$\frac{3}{4}$ mile.
Right peak of Kirby Wharf house.....	308	26	..	$\frac{3}{8}$ mile.
Near peak of hospital.....	348	39	..	$3\frac{1}{4}$ miles.
"East Cambridge Tall Stack".....	351	07	40	3 miles.

DOUBLE.

General locality.—Northern shore of Choptank River nearly opposite Cambridge about 1 mile north, west of entrance to Bolingbroke Creek and $1\frac{1}{2}$ miles east of Hambrooks Bar Beacon. (See Chart No. 35.)

Immediate locality.—Observed station is on point of marsh separated from field by a row of locust trees about 12 yards northeast of shore, 20 yards north of shore, 14 yards east of shore, and 30 yards south of a large wild-cherry tree.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"East Cambridge tall stack" (S $32^{\circ} 33'$ W)...	0	00	00	 $1\frac{3}{4}$ miles.
"Dicks Water Tank".....	51	44	20	 2 miles.
"Hambrooks Bar Beacon".....	60	01	00	 $1\frac{1}{2}$ miles.
"Large Water Tank".....	76	25	40	 $6\frac{3}{8}$ miles.
Chimney of house.....	107	34	..	 $2\frac{1}{8}$ miles.
Nail in blaze in wild-cherry tree (24 inches diameter).....	142	08	30	 26.69 meters.
Nail in blaze in locust tree (5 inches diameter).....	177	10	40	 24.92 meters.
Chimney outside of near end of house.....	177	29	..	 $\frac{1}{2}$ mile.
Nail in blaze in wild-cherry tree (4 inches diameter).....	207	20	40	 34.66 meters.
Spindle on barn cupola.....	248	23	..	 $\frac{1}{2}$ mile.
Chimney of house.....	320	47	..	 $2\frac{1}{4}$ miles.
Spindle on cupola.....	347	55	..	 2 miles.
Near peak of hospital.....	354	52	..	 $1\frac{3}{4}$ miles.

BOLING.

General locality.—Northern shore of Choptank River on an island in entrance to Bolingbroke Creek about $\frac{3}{4}$ mile northwest of Chancellors Point and 2 miles east-northeast of Cambridge. (See Chart No. 35.)

Immediate locality.—Observed station is in rushes on a sandy marsh about 3 feet above high water, 6 yards northeast of shore, 7 yards north of shore, 8 yards east of shore, and 160 yards northwest by north of entrance to Bolingbroke Creek.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"East Cambridge Tall Stack" (S $60^{\circ} 19'$ W)...	0	00	00	 $1\frac{7}{8}$ miles.
Chimney outside of left end of mansard-roof house.....	33	11	..	 $2\frac{7}{8}$ miles.
Flagpole on boathouse.....	37	05	..	 $2\frac{3}{4}$ miles.
"Hambrooks Bar Beacon".....	44	30	00	 $2\frac{3}{8}$ miles.
Nail in blaze in cedar tree (8 inches diameter).....	134	40	30	 26.53 meters.
Nail in blaze in old cedar stump (13 inches diameter).....	191	39	00	 5.29 meters.
Near peak of barn cupola.....	249	14	..	 $1\frac{3}{4}$ miles.
Near peak of barn.....	270	14	..	 $1\frac{1}{2}$ miles.
Chimney of house.....	294	34	..	 $1\frac{1}{2}$ miles.
Nail in blaze in cedar tree (11 inches diameter).....	300	25	40	 4.56 meters.
Chimney of house.....	313	10	..	 $1\frac{5}{8}$ miles.

REAR.

General locality.—Northern shore of Choptank River about $\frac{1}{4}$ mile northwest of Chancellors Point and $\frac{1}{2}$ mile southeast of entrance to Bolingbroke Creek. (See Chart No. 35.)

Immediate locality.—Observed station is in cultivated field on bluff about 12 feet above high water, 65 yards north of edge of bank, 110 yards northeast of edge of bank and trees, 160 yards east of edge of bank, and 95 yards northwest of bottom of gully.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Barber" (N 35° 22' E).....	0	00	00	1 mile.
Near corner of square cupola.....	27	51	..	$\frac{1}{4}$ mile.
Chimney of house.....	78	16	..	1 $\frac{1}{2}$ miles.
Near peak of barn cupola.....	105	00	..	1 $\frac{1}{4}$ miles.
Near peak of large barn.....	136	08	..	1 $\frac{3}{8}$ miles.
Left peak of large barn.....	177	19	..	1 $\frac{3}{4}$ miles.
Barn cupola.....	214	22	..	2 miles.
"Cambridge Standpipe".....	221	13	50	2 $\frac{3}{4}$ miles.
"Hambrooks Bar Beacon".....	255	40	50	3 miles.
"Large Water Tank".....	257	19	00	8 $\frac{1}{4}$ miles.
Chimney of house.....	280	15	..	1 $\frac{1}{4}$ miles.
Chimney outside near end of house.....	288	83	..	1 $\frac{3}{4}$ miles.

CHANCELLOR.

General locality.—Northern shore of Choptank River on Chancellors Point about $\frac{3}{4}$ mile north of entrance to Hurst Creek and $\frac{3}{4}$ mile southeast of entrance to Bolingbroke Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on sand and grass point about 1 foot above high water, 35 yards west of shore, 35 yards northeast of shore, 60 yards north by west of extreme end of point, 13 yards south of line of cedar stumps, 27 yards southeast of large lone pine tree, and almost on range of Cambridge Standpipe and left peak of hospital. Cement monument marking reference station is 4.70 meters N 31° 31' W of observed station and almost on line to large lone pine tree.

Marks.—Observed station is nail in cedar stub in center of 4-inch tile pipe with top flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 6 inches above surface of ground.

References.—

	°	'	"	
"Cambridge Standpipe" (S 78° 00' W).....	0	00	00	2 $\frac{1}{2}$ miles.
REFERENCE STATION.....	70	29	10	4.70 meters.
Nail in blaze in lone pine tree (16 inches diameter).....	71	00	00	24.74 meters.
Southeast corner of square cupola.....	115	45	..	350 yards.
Nail in blaze in cedar stump (16 inches diameter).....	122	32	50	12.40 meters.
Chimney of house.....	216	38	..	1 $\frac{1}{4}$ miles.
Near peak of house.....	245	53	..	1 $\frac{1}{8}$ miles.
Chimney on left end of house.....	282	44	..	1 $\frac{1}{4}$ miles.
Chimney of house.....	328	52	..	1 $\frac{3}{4}$ miles.
Nail in blaze in small pine tree.....	350	04	40	23.26 meters.
Left peak of hospital.....	359	06	..	2 $\frac{1}{4}$ miles.

BARBER.

General locality.—Northwestern shore of upper Choptank River about 1 mile north-northeast of Chancellors Point and about $\frac{3}{8}$ mile west-southwest of Goose Point. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 2 feet above high water, 12 yards north-northwest of county road and shore, 45 yards west-southwest of a cabin on the county road, 25 yards west of two cedar trees just across road, and 65 yards south of a wire fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe with top 2 inches below base of monument.

References.—

	°	'	"	
"Duck" (N $75^{\circ} 49'$ E).....	0	00	00	 $\frac{7}{8}$ mile.
Nail in blaze in cedar tree (10 inches diameter).....	5	04	50	 19.17 meters.
Smokepipe on wharf house.....	35	48	..	 $1\frac{1}{2}$ miles.
Near peak of house.....	57	06	..	 $1\frac{1}{2}$ miles.
Northwest peak of house.....	92	22	..	 $1\frac{3}{4}$ miles.
Chimney on left end of house.....	116	41	..	 $2\frac{1}{4}$ miles.
Near peak of house with square cupola.....	133	33	..	 $\frac{7}{8}$ mile.
Large lone tree.....	208	40	..	 350 yards.
Nail in blaze in cedar tree (5 inches diameter).....	209	58	40	 36.42 meters.
Nail in blaze in persimmon tree (5 inches diameter).....	323	12	30	 36.01 meters.
Near corner of barn.....	347	15	..	 21.96 meters.
Nail in blaze in cedar tree (10 inches diameter).....	359	16	50	 20.12 meters.

DUCK.

General locality.—Northern shore of Choptank River on Goose Point $\frac{3}{4}$ mile north of Oyster Shell Point and $1\frac{3}{4}$ miles northeast of Chancellors Point. (See Chart No. 35.)

Immediate locality.—Observed station is on edge of sand beach on lower part of point about on level with high water, 15 to 20 yards southeast of a group of cedar and persimmon trees. Cement monument marking reference station is 12.61 meters N $28^{\circ} 19'$ W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Jam" (N $35^{\circ} 54'$ E).....	0	00	00	 $1\frac{3}{8}$ miles.
Left peak of large barn.....	46	01	..	 $1\frac{3}{4}$ miles.
Center of roof of house.....	82	31	..	 $1\frac{3}{8}$ miles.
Smoke pipe on wharf house.....	115	52	..	 $\frac{7}{8}$ mile.
Left peak of barn cupola.....	160	21	..	 2 miles.
Near corner of square chimney of house.....	174	03	..	 $2\frac{3}{4}$ miles.
Chimney of house.....	192	50	..	 4 miles.
Near corner of square cupola on house.....	197	16	..	 $1\frac{5}{8}$ miles.
Nail in blaze in persimmon tree (2 inches diameter).....	238	59	40	 21.22 meters.
REFERENCE STATION.....	295	47	30	 12.61 meters.
Nail in blaze in persimmon tree (3 inches diameter).....	297	48	50	 15.20 meters.
Nail in blaze in cedar tree (3 inches diameter).....	332	27	20	 14.28 meters.

JAM.

General locality.—Western shore of Choptank River on Jamaica Point opposite entrance to Warwick River. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh point about 3 feet above high water, 25 yards west-northwest of end of wharf, 7 yards north of county road, 11 yards northeast of county road, 13 yards south of shore, 8 yards west-southwest of shore, and 30 yards north by east of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Spindle" (N 14° 53' W).....	0	00	00	 ¾ mile.
Chimney outside near end of house.....	16	33	..	 2 miles.
Chimney of large house.....	19	46	00	 2 miles.
"Wick".....	76	04	..	 ¾ mile.
Chimney of house.....	82	48	..	 1 ⅛ miles.
Left chimney of large brick house.....	90	07	..	 1 ½ miles.
Left corner of wharf house.....	95	57	20	 49.81 meters.
Right corner of wharf house.....	108	14	..	 46.85 meters.
Nail in first plank on level part of wharf.....	110	03	50	 24.94 meters.
Near peak of large barn.....	144	56	..	 1 ½ miles.
Chimney of house.....	171	30	..	 2 miles.
Near peak of house.....	202	51	..	 2 ¼ miles.
Near peak of house near wharf.....	211	21	..	 2 miles.
Right peak of barn cupola.....	218	30	..	 2 ½ miles.
Near corner of fence.....	269	38	..	 ¼ mile.

SPINDLE.

General locality.—Western shore of upper Choptank River about ¾ mile north of Jamaica Point Wharf. (See Chart No. 35.)

NOTE.—This triangulation landmark was destroyed before this publication was prepared, and therefore it is not described, although its name and location are shown on Chart No. 35.

BANK.

General locality.—Western shore of upper Choptank River about 1 mile north-northwest of Jamaica Point and 1 ¼ miles southwest of entrance to Cabin Creek. (See Chart No. 35.)

Immediate locality.—Observed station is in a cultivated field on a tree-fringed bluff about 20 feet above high water, 10 yards northwest of edge of bluff, 10 yards west of edge of bluff, and 12 yards north of edge of bluff.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Raceoon" (N 19° 26' E).....	0	00	00	 ¾ mile.
Left chimney of modern house.....	5	55	..	 1 ¼ miles.
Nail in blaze in branch of double oak tree (12 and 18 inches diameter).....	34	56	40	 7.03 meters.
Chimney of house in woods.....	54	30	..	 1 ½ miles.
Chimney of shanty in woods.....	86	07	..	 1 ⅛ miles.
Chimney of house.....	103	23	..	 1 ¾ miles.
Nail in blaze in oak tree (8 inches diameter).....	124	13	10	 8.55 meters.
Nail in blaze in cedar tree (7 inches diameter).....	161	00	10	 21.11 meters.
Front peak of house.....	168	29	..	 ½ mile.

RACCOON.

General locality.—Western shore of upper Choptank about $\frac{3}{8}$ mile south of entrance to a small creek, $1\frac{1}{2}$ miles north of Jamaica Point, and 1 mile west of entrance to Cabin Creek. (See Chart No. 35.)

Immediate locality.—Observed station is between 2 clumps of trees on sandy marsh about 2 feet above high water, 8 yards northwest of shore, 12 yards west of shore, 16 yards north of shore, and 200 yards southwest of woods beyond marsh.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Blind" (N 52° 15' E).....	0	00	00	 $\frac{3}{4}$ mile.
Chimney outside near end of house.....	34	22	..	 $1\frac{3}{4}$ miles.
Near peak of modern house.....	41	07	..	 $1\frac{1}{8}$ miles.
Chimney of house.....	77	59	..	 $1\frac{3}{4}$ miles.
Near peak of house.....	105	09	..	 2 miles.
Chimney of house.....	113	14	..	 $3\frac{1}{8}$ miles.
Near peak of Jamaica Point Wharf house.....	120	42	..	 $1\frac{1}{8}$ miles.
Left corner of house.....	144	31	..	 1 mile.
Nail in blaze in oak tree (10 inches diameter). 155	21	50	.....	12.66 meters.
Nail in blaze in large pine tree (12 inches diameter).....	204	45	40	 37.12 meters.
Nail in blaze in oak tree (10 inches diameter). 329	46	20	.....	26.50 meters.
Chimney outside near end of house.....	350	04	..	 $\frac{5}{8}$ mile.

BLIND.

General locality.—Northwestern shore of Choptank River about $\frac{1}{2}$ mile west-north west of entrance to Cabin Creek, and 2 miles north of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point between river and line of locust trees about 1 foot above high water, 11 yards north of shore, 15 yards west of shore, 16 yards northeast of shore at duck blind, and 25 yards east by north of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Up" (N 61° 44' E).....	0	00	00	 $\frac{3}{4}$ mile.
Chimney outside of near end of old house....	47	17	..	 1 mile.
Peak of side gable of modern house.....	57	24	..	 $1\frac{1}{4}$ miles.
Right peak of Jamaica Point wharf house. . .	131	24	..	 2 miles.
Chimney on house.....	162	44	..	 $1\frac{1}{4}$ miles.
Nail in blaze in locust tree (4 inches diameter).....	201	23	50	 10.28 meters.
Nail in blaze in locust tree (4 inches diameter).....	226	52	20	 7.53 meters.
Nail in blaze in locust tree (6 inches diameter).....	270	06	10	 5.72 meters.
Nail in blaze in locust tree (10 inches diameter).....	322	04	50	 14.25 meters.

UP.

General locality.—Northwestern shore of upper Choptank River about $\frac{3}{4}$ mile north of entrance to Cabin Creek and $2\frac{1}{2}$ miles north-northeast of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 55 yards northwest of extreme end of point, 25 yards west of shore, and 20 yards north of shore.

Survey of Oyster Bars, Talbot County, Md.

Marks.—Observed station is center point of triangle on standard cement monument projecting 8 inches above surface of marsh. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Myrtle" (S 60° 25' E).....	0	00	00	3/8 mile.
Peak of side gable of modern house.....	34	14	..	1 mile.
Chimney of old house.....	36	10	..	5/8 mile.
Tangent of point.....	77	45	..	1 mile.
House.....	111	45	..	1 3/8 miles.
Tangent of point.....	122	02	..	5/8 mile.
House.....	273	00	..	1 1/2 miles.
Tangent of point.....	305	15	..	175 yards.

MYRTLE.

General locality.—Eastern shore of upper Choptank River about 1/2 mile north of entrance to Cabin Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 17 yards east of shore, 20 yards south of extreme end of point, 15 yards southwest of small gut, and 250 yards west of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Hut" (S 7° 47' W).....	0	00	00	3/8 mile.
Left peak of old barn.....	6	41	..	7/8 mile.
Tangent of point.....	32	14	..	7/8 mile.
Chimney of house.....	53	01	..	2 miles.
Chimney outside east end of house.....	78	42	..	1 1/4 miles.
Near peak of shanty.....	157	18	..	3/4 mile.
Stack of cannery at Choptank.....	180	51	..	2 3/4 miles.
Left peak of house.....	194	19	..	2 1/4 miles.
Tangent of point.....	203	56	..	1/4 mile.
Right peak of roof showing over woods.....	314	37	..	3/4 mile.
Large lone pine tree.....	333	11	..	300 yards.

HUT.

General locality.—Eastern shore of upper Choptank River on north side of entrance to Cabin Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 15 yards east of shore, 50 yards northwest of shore, 20 yards northeast of extreme end of point, 90 yards southwest of a hut, and 80 yards south-southwest of trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"House" (S 46° 38' W).....	0	00	00	3/4 mile.
Chimney of house.....	25	27	..	1 3/4 miles.
Chimney outside of house.....	60	33	..	1 1/4 miles.
Cupola on barn.....	132	48	..	2 1/2 miles.
Right corner of hut.....	173	53	20	90 yards.
Chimney outside near end of old house.....	242	13	..	1/2 mile.
Peak of near gable of modern house.....	281	42	..	1/2 mile.
Right peak of old barn.....	337	43	..	3/8 mile.

HOUSE.

General locality.—Eastern shore of Choptank River about $\frac{1}{4}$ mile south of entrance to Cabin Creek, 1 mile north of entrance to Warwick River, and on south side of a small cove. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 14 yards south of shore, 26 yards southeast of shore, 35 yards southwest by west of shore and mouth of small creek in marsh and 175 yards north of woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 3 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Saw" (S 6° 22' W).....	0	00	00	 $\frac{3}{8}$ mile.
Two pine trees.....	5	49	..	.....
Left peak of shanty.....	126	49	..	 $1\frac{1}{8}$ miles.
Chimney outside near end of house.....	131	06	..	 $1\frac{1}{8}$ miles.
Near peak of house.....	137	29	..	 $1\frac{1}{8}$ miles.
Tangent of point.....	172	07	..	 $\frac{1}{4}$ mile.
Stack of cannery at Choptank.....	189	09	..	 4 miles.
Near peak of house.....	193	59	..	 $4\frac{1}{2}$ miles.
Near peak of shack.....	219	48	..	 $\frac{7}{8}$ mile.
Cut in woods.....	348	16	..	 $\frac{1}{2}$ mile.

SAW.

General locality.—Eastern shore of Choptank River about $\frac{1}{2}$ mile northeast of entrance to Warwick River, and 1 mile northeast by east of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 22 yards east of shore, 26 yards southeast of shore, 37 yards northeast of shore, 200 yards west-northwest of dense woods.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe, buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Wick" (S 19° 01' W).....	0	00	00	 $\frac{1}{2}$ mile.
Right peak of Jamaica Point Wharf house....	24	57	..	 1 mile.
Left corner of very wide chimney on brick house.....	32	14	..	 $1\frac{1}{4}$ miles.
Right corner of railing on roof of house.....	70	36	..	 $1\frac{1}{8}$ miles.
Chimney of house.....	86	44	..	 $1\frac{1}{4}$ miles.
Near peak of house.....	135	04	..	 $1\frac{1}{4}$ miles.
Chimney outside left end of house.....	152	42	..	 2 miles.
Cupola or steeple.....	181	04	00	 5 miles.
Near corner of brick house.....	311	51	..	 $\frac{1}{2}$ mile.

WICK.

General locality.—Eastern shore of upper Choptank River on northern side of entrance to Warwick River, about $\frac{3}{4}$ mile northeast of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on sandy ridge between beach and marsh, about 2 feet above high water, 8 yards northeast of shore, 10 yards north of shore, 9 yards east of shore, 100 yards southeast by east of extreme end of point, and 35 yards northwest of two pine trees. Cement monument marking reference station is 8.26 meters N 25° 00' E of observed station.

Marks.—Observed station is nail in cedar stub with top flush with the surface of the ground. Reference station is center point of triangle on standard cement monument projecting 4 inches above surface of ground.

References.—

	°	'	''	
"War" (S 2° 08' E)	0	00	00	5½ mile.
Near peak of house in trees	2	21	..	5½ mile.
Smoke pipe on wharf house	27	13	..	2¾ miles.
Tangent of Goose Point	45	55	..	1¾ miles.
Right peak of Jamaica Point Wharf house	62	29	..	5½ mile.
Right corner of very wide chimney on brick house	68	42	..	¾ mile.
Left corner of cupola on roof	115	10	..	1¾ miles.
Near peak of house	167	00	..	2¾ miles.
REFERENCE STATION	207	07	20	8.26 meters.
Nail in blaze in pine tree (12 inches diameter)	296	59	10	30.06 meters.
Right pine tree	325	53	20	400 yards.

WAR.

General locality.—Eastern shore of upper Choptank River on southern side of entrance to Warwick River, about ¾ mile east-southeast of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is on northern side of point of marsh about 1 foot above high water, 45 yards south of shore, 35 yards southeast of shore, 45 yards east of shore, and 35 to 45 yards southwest to west of woods. Cement monument marking reference station is 4.95 meters S 12° 18' E of observed station.

Marks.—Observed station is nail in center of cedar stub with top flush with surface of ground. Reference station is center point of triangle on standard monument projecting 4 inches above surface of ground.

References.—

	°	'	''	
"Gander" (S 11° 26' W)	0	00	00	¾ mile.
Chimney of house	17	12	..	2 miles.
Smoke pipe on wharf house	23	00	..	1¾ miles.
Left chimney of small house	26	05	..	2 miles.
Square cupola on large house	45	53	..	3¼ miles.
Left peak of house	66	11	..	1½ miles.
Right corner of very wide chimney on brick house	96	11	..	1 mile.
Left peak of Jamaica Point Wharf house	105	01	..	5½ mile.
Chimney of house	132	50	..	1¾ miles.
Near peak of house	157	00	..	2¾ miles.
Nail in blaze in pin oak tree (10 inches diameter)	186	09	50	42.26 meters.
Nail in blaze in pine tree (11 inches diameter)	212	30	40	41.75 meters.
Nail in blaze in pine tree (12 inches diameter)	245	18	30	31.45 meters.
Nail in blaze in pine tree (12 inches diameter)	267	08	30	30.11 meters.
REFERENCE STATION	336	16	20	4.95 meters.
Chimney of house	353	07	..	1 mile.

GANDER.

General locality.—Southeastern shore of Choptank River ¾ mile southwest of entrance to Goose Creek about 1¾ miles east-northeast of Oystershell Point and about 1½ miles south-southeast of Jamaica Point. (See Chart No. 35.)

Immediate locality.—Observed station is in an uncultivated field on bank about 6 feet above high water, 19 yards east of edge of bank, 33 yards northeast of edge of bank, 33 yards southeast of edge of bank, and 155 yards west of two large cedar trees at a paling fence.

Marks.—Observed station is center point of triangle on standard cement monument projecting 6 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Chief" (S 9° 44' W)	0	00	00	5½ mile.
Chimney of house	28	22	..	1¼ miles.
Smokepipe on wharf house	40	14	..	1½ miles.
Chimney of house	50	00	..	4½ miles.
"Cambridge Stand Pipe"	62	46	50	5¼ miles.
Chimney outside of house	113	39	..	1¼ miles.
Right chimney of house	135	48	..	1¼ miles.
Near peak of Jamaica Point Wharf house	147	14	..	1¼ miles.
Chimney of house	148	54	..	2½ miles.
Chimney of house	164	24	..	3¼ miles.
Tangent of point	172	50	..	¾ mile.
Right end of roof of long barn	235	04	..	¾ mile.
Black walnut tree	282	36	..	200 yards.
Chimney of house	344	59	..	¼ mile.

CHIEF.

General locality.—Southeast shore of Choptank River on a narrow neck of land between Choptank River and Indian Creek, about 1 mile east of Oystershell Point. (See Chart No. 35.)

Immediate locality.—Observed station is on a grass strip between Choptank River and Indian Creek about 2 feet above high water, 15 yards south of river shore, 11 yards north of creek shore, 20 yards southeast of river shore, and 25 yards southwest of river shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Shell" (S 85° 11' W)	0	00	00	1 mile.
Smoke pipe on wharf house	0	42	..	¾ mile.
Nail in blaze in locust tree (3 inches diameter)	13	37	10	11.76 meters.
Right corner of railing on house	78	32	..	2 miles.
Near peak of house	91	47	..	3½ miles.
Right corner of square chimney	114	47	..	½ mile.
Near corner of barn	144	05	..	¼ mile.
Nail in blaze in cedar tree (6 inches diameter)	167	07	10	22.07 meters.
Stack of cannery	208	56	20	¾ mile.
Peak of house between two chimneys	253	32	..	¼ mile.
Nail in blaze in cedar tree (8 inches diameter)	348	04	50	13.81 meters.
Near peak of cottage	358	38	..	1 mile.

SHELL.

General locality.—Southeastern shore of Choptank River on Oyster Shell Point about ¾ mile south of Goose Point and 1½ miles east-northeast of Chancellors Point. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 100 yards north of rail fence, 55 yards southwest of shore, 75 yards south of shore, 400 yards west of a wharf, 250 yards west by north of a small house near the shore, 50 yards west by north of corner of fence. Cement monument marking reference station is 2.27 meters N 83° 07' W of observed station.

Marks.—Observed station is nail in cedar stub flush with surface of ground. Reference station is center point of triangle on standard cement monument projecting 5 inches above the surface of the ground.

References.—

	°	'	"	
"Whitehall" (S 41° 55' W).....	0	00	00	 ½ mile.
Lone tree.....	29	12	..	 225 yards.
"Cambridge Standpipe".....	35	39	00	 4½ miles.
Right corner of square cupola.....	39	24	..	 1½ miles.
REFERENCE STATION.....	54	57	50	 2.27 meters.
Chimney on left end of house.....	83	10	..	 1½ miles.
Near peak of large house.....	150	53	..	 1½ miles.
Near peak of Jamaica Point Wharf house.....	158	17	..	 1½ miles.
Right peak of building.....	177	29	..	 2½ miles.
Chimney on house.....	205	20	..	 1¼ miles.
Smoke pipe on wharf house.....	221	13	..	 ¼ mile.
Near peak of shed.....	265	40	..	 150 yards.
Near peak of house.....	280	06	..	 300 yards.

WHITEHALL.

General locality.—Southeastern shore of Choptank River about ½ mile southwest of Oystershe: Point, and 1½ miles east of Chancellor Point. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point among water bushes about 12 yards south-southeast of shore, 13 yards south-southwest of shore, and 15 yards east-southeast of shore.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Ferry" (S 55° 08' W).....	0	00	00	 1¼ miles.
Chimney of house.....	10	50	..	 2¾ miles.
"Cambridge Stand Pipe".....	27	22	40	 4 miles.
Right of square cupola.....	46	16	..	 1½ miles.
Left chimney on long house.....	99	58	..	 1¼ miles.
Chimney outside near end of house.....	137	20	..	 1½ miles.
Near peak of large building.....	144	31	..	 2½ miles.
Front peak of Jamaica Point Wharf house... ..	150	00	..	 2½ miles.

FERRY.

General locality.—Southern shore of Choptank River near east side of entrance to Hurst Creek about 2½ miles east of Cambridge. (See Chart No. 35.)

Immediate locality.—Observed station is on a sand beach about on level with high water, 92 yards east-northeast of Hurst Creek, 1 yard southeast of shore, and 6 to 10 yards northwest to north of several low cedar trees. Cement monument marking reference station is 16.74 meters S 50° 12' E of observed station.

Marks.—Observed station is nail in pine stub in center of 2-inch tile pipe with top of pipe 6 inches below surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"E. Cambridge Tall Stack" (N 81° 21' W)...	0	00	00	 2½ miles.
"Hambrooks Bar Beacon".....	24	05	10	 3½ miles.
Near peak of large house with cupola.....	79	37	..	 1 mile.
Near peak of barn cupola.....	99	22	..	 2 miles.
Near peak of Jamaica Point Wharf house....	116	23	..	 3½ miles.
Nail in blaze in cedar tree (11 inches diameter)	193	07	00	 6.82 meters.
REFERENCE STATION.....	211	09	00	 16.74 meters.
Nail in blaze in cedar tree (8 inches diameter)	242	42	50	 8.32 meters.
Nail in blaze in cedar tree (16 inches diameter)	279	49	00	 9.76 meters.
Chimney of house.....	338	10	..	 1¾ miles.

SHOAL.

General locality.—Southern shore of Choptank River near entrance to a small creek about 1 mile east-southeast of Cambridge and $1\frac{5}{8}$ miles west-southwest of Chancellors Point. (See Chart No. 35.)

Immediate locality.—Observed station is in woods on a point of land about 10 feet above high water, 50 yards east of edge of bank, 6 yards southwest of wire fence at edge of high land, 7 yards south of wire fence, 11 yards west of wire fence, 13 yards west-southwest of large double oak tree, and 90 yards east of a marsh point at a creek. Cement monument marking reference station is 6.08 meters S $23^{\circ} 44'$ W of observed station.

Marks.—Observed station is center of tile pipe with top 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument projecting 5 inches above surface of ground.

References.—

	°	'	"	
"Cambridge" (N $46^{\circ} 31'$ W).....	0	00	00	 $1\frac{3}{4}$ miles.
Large chimney of house.....	25	55	..	 $3\frac{5}{8}$ miles.
Spindle on barn cupola.....	61	31	..	 $1\frac{3}{4}$ miles.
Left chimney of house.....	84	09	..	 2 miles.
Near peak of barn with cupola.....	106	11	..	 $1\frac{3}{4}$ miles.
Nail in blaze in large double oak tree.....	120	03	20	 11.31 meters.
Nail in blaze in black walnut tree (8 inches diameter).....	205	53	40	 10.96 meters.
Nail in blaze in cedar tree (6 inches diameter).....	224	26	30	 8.05 meters.
REFERENCE STATION.....	250	15	40	 6.08 meters.
Nail in blaze in black walnut tree (17 inches diameter).....	304	19	20	 3.19 meters.
Flagstaff on boathouse.....	358	43	..	 $2\frac{1}{2}$ miles.

E. CAMBRIDGE TALL STACK.

General locality.—Southern shore of Choptank River in the town of Cambridge on the east side of Cambridge Creek. (See Chart No. 35.)

Immediate locality.—Observed station is tall square brick smokestack at plant of Cambridge Manufacturing Co.

Marks.—Observed station is center of stack.

References.—None necessary.

E. CAMBRIDGE SPIRE.

General locality.—Southern shore of Choptank River in town of Cambridge on the east side of Cambridge Creek and the south side of Maryland Avenue. (See Chart No. 35.)

NOTE.—This triangulation landmark was torn down before this publication was prepared and therefore it is not described, although its name and location are shown on Chart No. 35.

CAMBRIDGE STAND PIPE.

General locality.—Southwestern side of Choptank River in the town of Cambridge. (See Chart No. 35.)

Immediate locality.—Observed station is on standpipe on the north side of High Street near Pine Street.

Marks.—Observed station is center of cylindrical water standpipe with ornamental railing on top.

References.—None necessary.

CAMBRIDGE.

General locality.—Southern shore of Choptank River on a point about $\frac{3}{4}$ mile southeast of Ham-brooks Bar Beacon and $\frac{1}{4}$ mile northwest of Cambridge steamer wharf. (See Chart No. 35.)

Immediate locality.—Observed station is on a marsh point about 1 foot above high water, 30 yards west of shore, 35 yards south of shore at cut, 40 yards southwest of shore, and 3 yards southwest of barbed-wire fence running northwest and southeast.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Command" (N 50° 20' W).....	0	00	00	¾ mile.
"Hambrooks Bar Beacon".....	36	12	00	¾ mile.
Southwest peak of Kirby Wharf house.....	58	27	..	1¾ miles.
Chimney outside of south end of house.....	107	00	..	1¾ miles.
Near one of four chimneys on large square house.....	133	26	..	2¼ miles.
Right chimney of large house on Chancellors Point.....	146	27	..	2¾ miles.
Weather vane on hotel.....	235	36	..	½ mile.
Chimney of house.....	328	03	..	¾ mile.
Flagpole.....	354	09	..	¾ mile.
Flagpole on boathouse.....	359	24	..	¾ mile.

HAMBROOKS BAR BEACON.

General locality.—Southern side of Choptank River about ¼ mile offshore from point of land known as Hambrooks Bar, about 2 miles southeast of Howells Point, and 1½ miles northwest of Cambridge. (See Chart No. 35.)

Immediate locality.—Observed station is on a cylindrical foundation known as Hambrooks Bar Beacon.

Marks.—Observed station is center point of lantern on Hambrooks Bar Beacon.

References.—None necessary.

COMMAND.

General locality.—Southern shore of Choptank River about ½ mile west-southwest of Hambrooks Bar Beacon and about 1½ miles northwest of Cambridge Wharf. (See Chart 35.)

Immediate locality.—Observed station is on a marsh point inside of a fence line about 2 feet above high water, 18 yards southeast of shore, 16 yards south of shore, 25 yards southwest of shore, and 150 yards northwest of a boathouse.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (N 49° 40' W)....	0	00	00	6¾ miles.
Nail in blaze in fence post.....	5	33	30	10.85 meters.
Near peak of large building.....	16	45	..	2¾ miles.
Nail in blaze in fence post.....	65	08	20	11.01 meters.
Left chimney of house with three dormer windows.....	68	28	..	1¾ miles.
Near peak of Kirby Wharf house.....	86	40	..	1½ miles.
"Hambrooks Bar Beacon".....	121	17	50	½ mile.
Near peak of large house.....	153	10	..	3 miles.
Flagstaff on boathouse.....	183	20	..	150 yards.
"Dicks Water Tank".....	266	29	30	¾ mile.
Nail in blaze in fence post.....	328	25	40	17.23 meters.
Left chimney of old house.....	331	53	..	2¾ miles.
"Large Water Tank".....	347	03	10	5 miles.

DICKS WATER TANK.

General locality.—Southern shore of Choptank River near Hambrooks Bar about $\frac{5}{8}$ mile southwest of Hambrooks Bar Beacon, and $\frac{1}{4}$ mile west of extreme end of Hambrooks Bar. (See Chart No. 35.)

Immediate locality.—Observed station is on water tank.

Marks.—Observed station is spindle on top of water tank.

References.—None necessary.

HOWARD.

General locality.—Southern shore of Choptank River, 2 miles southeast of Horn Point, and about $\frac{1}{4}$ mile northwest of entrance to Jenkins Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on cultivated land on bluff about 12 feet above high water, 25 yards southwest of edge of bluff, 30 yards south of edge of bluff, 35 yards west of edge of bluff, 45 yards west-northwest of corner of fence dividing field from marsh, and 65 yards northeast of the south one of two small poplar trees in field.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—	°	'	"	
"Choptank River Light" (N 36° 14' W)	0	00	00	6 miles.
Near peak of barn	30	20	..	3½ miles.
"Black Beacon"	32	16	50	2½ miles.
Red Beacon	34	11	30	2⅞ miles.
Near peak of low house in trees	79	52	..	3¼ miles.
Near peak of Kirby Wharf house	90	53	..	3 miles.
"Dicks Water Tank"	109	57	40	1½ miles.
Left chimney of house	115	00	..	1 mile.
Nail in blaze in locust tree (8 inches diameter)	125	51	50	37.49 meters.
Nail in blaze in locust tree	144	34	50	45.66 meters.
Nail in blaze in locust tree	188	22	40	63.83 meters.
Near peak of barn	245	03	..	¼ mile.
Right peak of house	317	02	..	¼ mile.
Right peak of old house	351	02	..	1¼ miles.

TOOT.

General locality.—Southern shore of Choptank River on Horn Point about 1½ miles west of Howells Point, and at eastern side of entrance to Lecomptes Bay. (See Chart No. 35.)

Immediate locality.—Observed station is in woods about 7 feet above high water, 15 yards south of shore, 13 yards southwest of shore, and 20 yards west of shore, and near but not on highest point of ground. Cement monument marking reference station is 12.38 meters S 33° 34' W of observed station.

Marks.—Observed station is nail in center of stub in 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument projecting 4 inches above the surface of the ground.

References.—	°	'	"	
"Choptank River Light" (N 34° 15' W)	0	00	00	4⅞ miles.
East peak of large barn	57	02	..	2¼ miles.
Large chimney of house	68	24	..	2½ miles.
Red Beacon	71	28	00	2 miles.
"Black Beacon"	73	17	30	1⅝ miles.
Near peak of house	88	38	..	2 miles.
Nail in blaze in elm tree	147	42	40	5.48 meters.
Nail in blaze in oak tree (24 inches diameter)	200	47	10	4.70 meters.
Nail in blaze in oak tree (20 inches diameter)	246	58	10	16.89 meters.

References—Continued.

	°	'	"	
REFERENCE STATION.....	247	49	00	12.38 meters.
Chimney of house.....	293	21	..	1½ miles.
Chimney outside of house.....	331	19	..	1¾ miles.
"Large Water Tank".....	344	41	10	2¾ miles.
Near corner of boathouse.....	351	52	..	2¾ miles.

LE COMPTE.

General locality.—Southern shore of Choptank River on southwestern side of Lecomptes Bay about 1½ miles west-southwest of Horn Point, ⅝ mile northwest of Travers Wharf, and ¼ mile southwest of mouth of Lecomptes Creek. (See Chart No. 35.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 18 yards west of point of shore, 14 yards south-southeast of shore, 5 yards east-southeast of turn in shore at beach, 7 yards northeast of a pool, 10 yards northwest of cut in shore, and 115 yards southeast of near one of two large cedar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Grubin" (W 56° 00' E).....	0	00	00	3½ miles.
"Black Beacon".....	0	12	10	2¾ miles.
Barn cupola.....	9	10	..	..
North peak of wharf house.....	69	02	..	½ mile.
North peak of house.....	106	43	..	¾ mile.
Left one of two large cedar trees.....	248	12	..	117 yards.
Spindle on barn cupola.....	280	48	..	½ mile.
Chimney outside of house.....	303	44	..	¾ mile.
Red Beacon.....	358	07	20	3½ miles.

LARGE WATER TANK.

General locality.—Southwestern shore of Choptank River at Castle Haven about 2¾ miles south of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is on water tank on high steel tower near barns at Castle Haven.

Marks.—Observed station is center point of windmill on water tank.

References.—None necessary.

CASTLE.

General locality.—Southern shore of Choptank River on Castle Haven Point on north side of Castle Haven Creek about 2 miles south-southwest of Choptank River Light. (See Chart No. 35.)

Immediate locality.—Observed station is on a narrow neck of land, about 25 yards south-southwest of shore of Choptank River, 20 yards north of shore of cove, 22 yards west of bathhouse, and 100 yards east-northeast of three poplar trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Choptank River Light" (N 25° 41' W)....	0	00	00	2 miles.
Right corner of house near Bachelor Point...	19	27	..	3 miles.
Left corner of bathhouse.....	95	31	20	21.42 meters.
Near corner of bathhouse.....	109	32	20	19.83 meters.
Near peak of house.....	122	56	..	3 miles.
Right peak of boathouse at Castle Haven				
Wharf.....	215	04	..	½ mile.
Right corner of chimney of brick house....	254	18	..	½ mile.

COOK POINT WINDMILL.

General locality.—Eastern shore of Chesapeake Bay on Cook Point between Tripps Bay and Cook Point Cove about $1\frac{1}{4}$ miles southeast of end of point. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is on windmill over smaller and west one of two water tanks west of a barn on Cook Point farm.

Marks.—Observed station is center of windmill over smaller tank.

References.—None necessary.

BRANNOCK.

General locality.—Eastern shore of Chesapeake Bay between Choptank River and Little Choptank River on the southern shore of Brannock Bay about 7 miles southeast of Sharps Island Light. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is on high land about 8 feet above high water, 11 yards south of shore, 7 yards south of edge of bluff, 8 yards north of rail fence on far side of county road, 50 yards east of bend where road leaves shore and runs toward farmhouse and 150 yards northeast of a farmhouse.

Marks.—Observed station is center point of triangle on standard cement monument with top projecting about 4 inches above surface of ground. Subsurface mark is 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	//	
Sharps Island Light (N $54^{\circ} 34'$ W).....	o	oo	oo	7 miles.
Near peak of house on Cook Point.....	38	18	..	$3\frac{1}{2}$ miles.
"Cook Point Windmill".....	45	33	30	$2\frac{1}{2}$ miles.
Right chimney of house in trees.....	83	15	..	2 miles.
Between two chimneys on large part of house.....	104	31	..	1 mile.
Outside chimney on near end of house.....	108	06	..	1 mile.
Center one of three chimneys of house.....	142	03	..	1 mile.
Tangent of right end of barn roof.....	150	49	..	1 mile.
Center one of three chimneys on house.....	163	16	..	$\frac{3}{4}$ mile.
Right peak of house.....	203	34	..	2 miles.
Left chimney of $1\frac{1}{2}$ -story house across creek.....	210	47	..	2 miles.
Near peak of barn.....	285	11	..	$\frac{3}{4}$ mile.
Tangent of Mills Point.....	343	43	..	$\frac{3}{4}$ mile.
Tangent of left end of Sharps Island Hotel.....	352	12	..	$5\frac{1}{2}$ miles.

ROBINS.

General locality.—Eastern shore of Chesapeake Bay on Hills Point at northeast side of entrance to Little Choptank River about 6 miles south-southeast of Sharps Island Light. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is in cultivated field about 8 feet above high water, 40 yards northeast by north of edge of bluff, 45 yards east by north of point of bluff, 65 yards south by east of edge of bluff in range with Sharps Island Light, and 140 yards north by west of wire fence at bluff.

Marks.—Observed station is center point of triangle on standard cement monument projecting 4 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	o	/	//	
"Sharps Island Light" (N $34^{\circ} 11'$ W).....	o	oo	oo	6 miles.
Nail in blaze in cedar tree (8 inches diameter).....	5	43	20	37.11 meters.
Left chimney of house.....	76	25	..	$\frac{1}{8}$ mile.
Near peak of barn.....	87	14	..	$\frac{1}{8}$ mile.
Tallest chimney of house.....	91	22	..	$\frac{3}{4}$ mile.
Near peak of barn.....	222	52	..	$5\frac{1}{4}$ miles.
Tangent of end of woods on Taylor Island ..	229	14	..	$5\frac{1}{4}$ miles.

References—Continued.

	°	'	"	
Chimney of house on James Point.....	247	10	..	3½ miles.
Tangent of James Point.....	248	..	..	3 miles.
Nail in blaze in cedar tree (8 inches diameter).....	336	32	30	28.22 meters.
Nail in blaze in cedar tree (8 inches diameter).....	353	18	50	30.90 meters.
Tangent of right side of hotel on Sharps Island.....	356	39	..	4½ miles.

JAMES (LITTLE CHOPTANK RIVER).

General locality.—Eastern side of Chesapeake Bay on northeast end of James Island at south side of entrance to Little Choptank River. (See Charts Nos. 36 and 37.)

Immediate locality.—Observed station is on marsh about 1 foot above high water, 8 yards west of shore, 11 yards northwest of shore, 85 yards south of shore, and 75 yards east of pine woods. Cement monument marking reference station is 19.48 meters S 84° 17' W of observed station.

Marks.—Observed station is center of 2-inch tile pipe projecting 2 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of surface pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Robins" (N 23° 14' E).....	0	00	00	2¾ miles.
Near peak of house.....	12	37	..	3½ miles.
Chimney on near end of house.....	48	42	..	3¾ miles.
Near peak of barn.....	89	01	..	4¼ miles.
Near chimney of house on Hooper Point.....	100	36	..	3 miles.
Left peak of long barn.....	107	05	..	3½ miles.
Near peak of barn.....	146	09	..	2½ miles.
REFERENCE STATION.....	241	03	00	19.48 meters.
"Sharps Island Light".....	320	02	40	7¾ miles.
Right edge of old hotel on Sharps Island.....	321	43	..	6¾ miles.
Left tangent of woods on Cook Point.....	357	29	..	7 miles.

CORNER (Choptank River).

General locality.—Southern shore of Choptank River on east side of entrance to Chapel Creek about 2 miles southeast of Todd Point, and 3 miles south-southwest of Choptank River Light. (See Chart No. 37.)

Immediate locality.—Observed station is on grassy land about 3 feet above high water, 30 yards east of shore, 30 yards south of shore, 35 yards southeast of extreme end of point, and west of small clump of small pine trees.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	°	'	"	
"Dot" (N 58° 43' W).....	0	00	00	2½ miles.
Nail in blaze in holly tree (14 inches diameter).....	35	13	40	13.81 meters.
"Choptank River Light".....	75	55	20	3 miles.
Nail in blaze in pine tree (4 inches diameter).....	105	03	00	3.57 meters.
Right corner of new house.....	108	42	..	½ mile.
Nail in blaze in pine tree (5 inches diameter).....	187	20	10	8.21 meters.
Near peak of 2½-story house.....	308	25	..	¾ mile.
Chimney outside right end of house.....	340	33	..	2 miles.
Chimney outside near end of house.....	356	46	..	2¼ miles.

DOT.

General locality.—Southern shore of Choptank River on Todd Point about 3 miles east of Cook Point and $3\frac{1}{2}$ miles southwest of Choptank River Light. (See Chart No. 37.)

Immediate locality.—Observed station is about 4 feet above high water, 55 yards west-southwest of shore, 30 yards south-southwest of edge of bank, 40 yards south by east of point where bank meets marsh, 70 yards south by west of extreme end of point, and 200 yards northeast by north of a house.

Marks.—Observed station is center point of triangle on standard cement monument projecting 5 inches above surface of ground. Subsurface mark is center of 2-inch tile pipe buried with top 2 inches below base of monument.

References.—

	0	1	2	
"Choptank River Light" (N 56° 26' E).....	0	00	00	 3 $\frac{1}{4}$ miles.
"Large Water Tank".....	37	36	00	 3 $\frac{1}{4}$ miles.
Near peak of house.....	42	45	..	 2 $\frac{3}{4}$ miles.
Near peak of building.....	72	49	..	 2 $\frac{1}{4}$ miles.
Chimney outside right end of house.....	102	18	..	 1 $\frac{3}{8}$ miles.
Chimney outside near end of house.....	175	25	..	 200 yards.
Left chimney of house on Cook Point.....	212	24	..	 2 $\frac{3}{4}$ miles.
"Sharps Island Light".....	218	32	40	 7 $\frac{1}{2}$ miles.
Church spire.....	250	04	40	 7 $\frac{1}{4}$ miles.
Left peak of house.....	277	10	..	 7 $\frac{1}{4}$ miles.
Near peak of barn.....	290	09	..	 7 $\frac{1}{2}$ miles.
Cupola on house.....	333	02	..	 3 $\frac{3}{8}$ miles.

BOUNDARIES OF OYSTER BARS.

EXPLANATION.

The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the designation and employment by the Department of Commerce and Labor of such officers, experts, and other technically qualified persons "as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland." The oyster laws of Maryland provide that the Maryland Shell Fish Commissioners, with the aid of such persons as may be designated by the Government, shall proceed "to have laid out, surveyed, and designated on the said charts the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts." The oyster laws of Maryland also provide in another section that there shall "be made a true and accurate survey of the natural oyster beds, bars, and rocks * * * with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey."

Under the provisions of the laws quoted above the State of Maryland, in cooperation with the Department of Commerce and Labor, must define the boundaries of the natural oyster bars "as accurately as practicable" and also "with reference to fixed and permanent objects on the shore, giving courses and distances." The requirement of "as accurately as practicable" is easily fulfilled by definition of the location of the corners of the oyster bars by latitude and longitude. In fact, this method is probably the most satisfactory and accurate one that could be used for all purposes of legal definition or for relocation of the oyster-bar boundaries by competent engineers. Therefore the additional requirement of "giving courses and distances" is superfluous and is only fulfilled in the published definitions on account of the specific provisions of the law making it compulsory. This part of the description of boundaries has involved an immense amount of extra computations in order to prevent technical discrepancies between the latitude and longitude of a corner of an oyster bar and its distance and bearing from objects on shore of known latitude and longitude without adding anything to the accuracy and very little to the convenience of practical use of the descriptions of the oyster-bar boundaries.

As provided by law the boundaries of the oyster bars are all straight lines, but in the work already completed they have inclosed areas of all shapes from triangles to complicated 14-sided figures, and of all sizes from 4 acres to 7,548 acres. The sides have varied in length from 93 to 7,529 yards, and in some cases the corners of the boundaries have been practically at the triangulation stations from which they are located, while in other instances they were over 13,600 yards from the landmarks most available for the purpose of fixing their position.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made, and the magnitude of the work with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and great importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the Commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and the future.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in each county.

Title.—At the top of each tabular form is given the legal name of the oyster bar to be described, and the one by which it is known and designated in the published oyster records and on the oyster charts. The adopted name of the oyster bar is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission; and when there was no local name in common use a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the oyster bar was located.

Underneath the name, in parentheses, is given the general locality of the oyster bar and the serial number of the "Maryland Oyster Chart" on which its legal boundaries are shown.¹

First column.—This column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar. Where a corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars, only the number of the corner of the oyster bar being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definition of the location of

¹ These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"¹ and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"² gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing" and "Distance" of the "Corner of bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars: one, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

¹ The mean magnetic variation for Talbot County was $6^{\circ} 10'$ west of north in 1911 and increasing at the rate of $5'$ yearly.

² Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

(1) *Triangulation*.—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant, the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "Poplar Island" oyster bar, which is the first one described in this publication, and assume that "Corner No. 3," is to be examined as to its position. The angle between the two landmarks "Valliant" and "Haddaway," as determined from right to left from the forward bearings from this corner, is $58^{\circ} 17'$, and the angle between "Haddaway" and "Bloody Point Bar Light" is $120^{\circ} 05'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree, the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor (position finder), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation.

This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant, then the other, until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic location of a point is attained. In fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the Commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State Fishery Force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer can take compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,¹ and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks for which the bearings are published have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used. This can be done by getting their bearings directly from the chart by parallel rulers or a protractor and then applying these new bearings in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fifth column of the tables opposite the "corner" in question. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a

¹ The mean magnetic variation for Talbot County is 6° 20' west of north in 1911 and increasing at the rate of 5' yearly.

second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

POPLAR ISLAND.

(Chesapeake Bay—Off Poplar Island—Charts Nos. 31 and 33.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 45 43.52	76 23 47.66	S 62 30 E	N 62 29 W	1,902	Poplar South.
			N 47 03 E	S 47 03 W	1,510	Valliant.
			N 2 53 E	S 2 53 W	8,697	Bloody Point Bar Light.
2	38 45 53.47	76 24 19.45	S 64 20 E	N 64 19 W	2,801	Poplar South.
			N 70 22 E	S 70 23 W	2,065	Valliant.
			N 8 41 E	S 8 42 W	8,448	Bloody Point Bar Light.
3	38 47 45.44	76 23 17.97	S 5 57 E	N 5 57 W	3,099	Valliant.
			S 64 14 E	N 64 12 W	5,587	Haddaway.
			N 4 19 W	S 4 19 E	4,589	Bloody Point Bar Light.
4	38 47 32.65	76 22 13.67	S 26 26 E	N 26 26 W	5,807	Great.
			S 59 04 E	N 59 04 W	3,888	Haddaway.
			N 22 11 W	S 22 12 E	5,408	Bloody Point Bar Light.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

LOWS POINT.

(Eastern Bay—Charts Nos. 31 and 33.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 47 09.33	76 21 17.76	S 14 20 E S 56 52 E N 46 41 E	N 14 20 W N 56 52 W S 46 43 W	4,639 2,219 7,455	Great. Haddaway. Kemp Tower.
2	38 47 41.86	76 21 16.85	S 38 27 E N 53 15 E N 37 00 W	N 38 27 W S 53 16 W S 37 02 E	2,949 6,332 5,882	Haddaway. Kemp. Bloody Point Bar Light.
3	38 48 26.00	76 19 35.90	N 46 20 E N 62 38 W S 12 20 W	S 46 21 W S 62 41 E N 12 20 E	3,331 6,984 3,888	Kemp. Bloody Point Bar Light. Haddaway.
4	38 48 07.05	76 18 50.23	N 19 02 W N 62 32 W S 32 48 W	S 19 03 E S 62 35 E N 32 47 E	6,979 8,349 3,759	Straight. Bloody Point Bar Light. Haddaway
5	38 47 16.80	76 20 36.40	S 27 37 E N 41 42 E N 30 44 W	N 27 37 W S 41 44 W S 30 40 E	1,654 6,497 7,802	Haddaway. Kemp Tower. Bloody Point Bar Light.

MARYS DELIGHT.

(Eastern Bay—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 48 54.24	76 19 00.67	N 47 42 E N 72 26 W S 20 20 W	S 47 43 W S 72 29 E N 20 19 E	2,001 7,481 5,067	Kemp. Bloody Point Bar Light. Haddaway.
2	38 49 01.93	76 19 31.72	N 64 42 E N 72 26 W S 10 38 W	S 64 42 W S 72 28 E N 10 38 E	2,544 6,622 5,097	Kemp. Bloody Point Bar Light. Haddaway.
3	38 49 32.84	76 19 33.63	N 81 19 W S 8 22 W N 88 54 E	S 81 22 E N 8 22 E S 88 54 W	6,335 6,118 2,351	Bloody Point Bar Light. Haddaway. Kemp.
4	38 49 05.28	76 18 55.67	N 54 08 E N 75 27 W S 20 17 W	S 54 09 W S 75 29 E N 20 16 E	1,664 7,505 5,461	Kemp. Bloody Point Bar Light. Haddaway.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WADES POINT.

(Eastern Bay—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 50 03.28	76 18 29.62	S 52 41 E	N 52 41 W	1,242	Kemp Tower.
			N 70 04 E	S 70 06 W	3,836	Rich Neck Water Tank.
			N 46 27 W	S 46 26 E	3,890	Straight.
2	38 50 15.25	76 18 55.22	S 55 11 E	N 55 10 W	2,026	Kemp Tower.
			N 78 06 E	S 78 06 W	4,375	Rich Neck Water Tank.
			N 43 18 W	S 43 19 E	3,127	Straight.
3	38 50 53.78	76 18 28.07	N 71 10 W	S 71 11 E	3,023	Straight.
			S 21 06 E	N 21 05 W	2,032	Kemp Tower.
			S 83 39 E	N 83 38 W	3,587	Rich Neck Water Tank.
4	38 50 23.54	76 17 59.43	N 61 05 W	S 61 07 E	4,129	Straight.
			S 7 37 E	N 7 37 W	1,440	Kemp Tower.
			N 77 29 E	S 77 31 W	2,878	Rich Neck Water Tank.
5	38 50 06.52	76 18 12.44	S 31 49 E	N 31 49 W	1,015	Kemp Tower.
			N 69 13 E	S 69 13 W	3,373	Rich Neck Water Tank.
			N 51 51 W	S 51 52 E	4,161	Straight.

SEDGE MARSH.

(Eastern Bay—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 50 45.88	76 17 35.05	N 73 43 W	S 73 45 E	4,436	Straight.
			S 11 38 W	N 11 38 E	2,235	Kemp Tower.
			S 86 34 E	N 86 33 W	2,166	Rich Neck Water Tank.
2	38 50 50.10	76 17 51.70	N 73 55 W	S 73 57 E	3,975	Straight.
			S 0 18 W	N 0 18 E	2,332	Kemp Tower.
			S 84 02 E	N 84 01 W	2,015	Rich Neck Water Tank.
3	38 51 09.90	76 17 29.38	N 84 23 W	S 84 25 E	4,429	Straight.
			S 11 19 W	N 11 19 E	3,059	Kemp Tower.
			S 65 01 E	N 65 01 W	2,225	Rich Neck Water Tank.
4	38 51 04.26	76 17 20.17	N 82 22 W	S 82 23 E	4,693	Straight.
			S 16 43 W	N 16 42 E	2,934	Kemp Tower.
			S 67 06 E	N 67 04 W	1,927	Rich Neck Water Tank.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

RICH NECK.

(Eastern Bay—Chart No. 31.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 51 32.93	76 17 03.04	N 71 12 W S 18 56 W S 37 38 E	S 71 14 E N 18 55 E N 37 38 W	4,844 3,993 2,166	Mouth. Kemp Tower. Rich Neck Water Tank.
2	38 51 59.14	76 17 42.52	N 79 11 W S 3 07 W S 67 31 E	S 79 12 E N 3 07 E N 67 30 W	3,609 4,667 3,445	Mouth. Kemp Tower. Dixon.
3	38 52 11.20	76 17 26.07	Thence along county boundary as delineated on Chart No. 31 to corner No. 3.			
			N 86 08 W S 7 44 W S 57 54 E	S 86 10 E N 7 44 E N 57 55 W	3,987 5,114 3,246	Mouth. Kemp Tower. Dixon.
4	38 51 46.33	76 16 48.83	N 77 24 W S 21 33 W S 23 38 E	S 77 26 E N 21 32 E N 23 38 W	5,083 4,546 2,367	Mouth. Kemp Tower. Rich Neck Water Tank.

TILGHMANS POINT.

(Eastern Bay—Charts Nos. 31 and 32.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 51 30.20	76 16 15.27	S 34 45 W S 2 14 E S 68 50 E	N 34 44 E N 2 14 W N 68 49 W	4,484 1,625 947	Kemp Tower. Rich Neck Water Tank. Dixon.
2	38 51 45.94	76 16 26.10	S 28 18 W S 9 12 E S 53 15 E	N 28 17 E N 9 12 W N 53 14 W	4,788 2,183 1,459	Kemp Tower. Rich Neck Water Tank. Dixon.
3	38 52 12.40	76 15 41.00	N 14 45 E N 30 40 W S 15 25 W	S 14 46 W S 30 41 E N 15 25 E	4,898 3,653 3,161	Parsons Island Water Tank. Needle. Rich Neck Water Tank.
4	38 52 39.22	76 15 25.84	N 11 52 E N 45 19 W S 8 57 W	S 11 52 W S 45 20 E N 8 57 E	3,693 3,181 2,702	Parsons. Needle. Dixon.
5	38 52 31.74	76 15 11.38	N 5 35 E N 46 43 W S 18 21 W	S 5 35 W S 46 44 E N 18 21 E	3,884 3,631 2,547	Parsons. Needle. Dixon.
6	38 52 11.48	76 15 10.40	N 7 23 E S 37 28 W S 18 48 W	S 7 23 W S 37 29 E N 18 48 E	4,588 3,997 1,832	Parsons. Needle. Dixon.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

UPPER HARRIS CREEK.

(Harris Creek—Charts Nos. 31, 32, and 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 46 20.52	76 16 36.33	N 6 14 W N 49 45 W S 81 33 W	S 6 14 E S 49 46 E N 81 34 E	622 478 478	Mink. Grace. Koot.
2	38 46 21.22	76 16 56.08	N 28 49 E S 59 05 W S 60 13 W	S 28 50 W S 59 05 E N 60 13 E	326 419 536	Grace. Rabbit. Fox.
3	38 46 25.20	76 16 56.02	S 49 22 W S 11 43 E N 89 03 E	N 49 22 E N 11 43 W S 89 03 W	615 233 773	Fox. Koot. Bozman.
4	38 46 40.40	76 16 34.90	S 34 34 W S 23 21 E N 64 51 E	N 34 34 E N 23 21 W S 64 52 W	900 545 568	Koot. Bozman. Pink.
5	38 46 45.96	76 16 34.38	S 16 26 E N 83 53 E N 25 52 E	N 16 26 W S 83 53 W S 25 52 W	716 593 711	Bozman. Pink. Clump.
6	38 47 08.22	76 16 17.43	S 4 19 E S 71 55 E N 46 04 E	N 4 19 W N 71 55 W S 46 05 W	699 414 423	Pink. Miller. Otto.
7	38 47 35.76	76 16 22.00	N 83 08 W S 1 51 W S 78 00 E	S 83 08 E N 1 51 E N 78 00 W	245 692 441	End. Lawn. Rod.
8	38 47 34.78	76 16 09.12	N 83 54 W S 28 49 W S 8 03 E	S 83 54 E N 28 49 E N 8 03 W	586 752 668	End. Lawn. Otto.
9	38 47 03.04	76 16 08.03	N 43 32 W N 80 40 W S 20 32 W	S 43 32 E S 80 40 E N 20 32 E	568 392 558	Lawn. Clump. Pink.

UPPER HILL.

(Eastern Bay—Chart No. 32.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 51 52.53	76 15 12.90	N 4 36 E N 34 20 W S 34 50 W	S 4 37 W S 34 21 E N 34 49 E	5,206 4,616 1,334	Parsons. Needle. Dixon.
2	38 52 03.54	76 15 17.66	N 6 26 E N 35 46 W S 23 28 W	S 6 27 W S 35 47 E N 23 27 E	4,848 4,240 1,599	Parsons. Needle. Dixon.
3	38 52 05.52	76 15 10.08	N 4 08 E N 38 26 W S 28 37 W	S 4 09 W S 38 26 E N 28 36 E	4,763 4,308 1,747	Parsons. Needle. Dixon.
4	38 51 54.60	76 15 05.40	N 2 28 E N 36 49 W S 39 29 W	S 2 28 W S 36 50 E N 39 29 E	5,124 4,674 1,509	Parsons. Needle. Dixon.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ALDRIDGES DISCOVERY.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 51 31.38	76 14 40.48	S 74 32 W S 4 16 W S 22 19 E	N 74 31 E N 4 16 E N 22 18 W	1,432 3,503 5,019	Dixon. Seth. Sara.
2	38 51 43.26	76 14 40.48	S 64 11 W S 7 17 W S 18 18 E	N 64 10 E N 7 17 E N 18 18 W	1,796 3,925 5,313	Dixon. Seth. Sara.
3	38 51 33.94	76 14 32.18	S 75 42 W S 11 20 W S 17 02 E	N 75 42 E N 11 19 E N 17 02 W	1,894 3,650 4,946	Dixon. Seth. Sara.

HORSESHOE.

(Miles River—Chart No. 32.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 51 30.28	76 14 25.02	S 87 39 W S 14 41 W S 15 18 E	N 87 39 E N 14 41 E N 15 18 W	1,019 3,573 4,776	Pearson. Seth. Sara.
2	38 51 38.50	76 14 25.80	S 72 16 W S 13 21 W S 14 42 E	N 72 16 E N 13 20 E N 14 42 W	1,048 3,836 5,049	Pearson. Seth. Sara.
3	38 51 39.40	76 14 08.86	S 76 24 W S 19 30 W S 9 38 E	N 76 24 E N 19 29 E N 9 38 W	1,486 3,992 4,985	Pearson. Seth. Sara.
4	38 51 31.18	76 14 08.08	S 87 11 W S 21 13 W S 9 57 E	N 87 10 E N 21 12 E N 9 57 W	1,467 3,739 4,707	Pearson. Seth. Sara.

TURTLE BACK.

(Miles River—Chart No. 32.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 50 55.28	76 14 15.54	N 48 05 W S 26 56 W S 16 26 E	S 48 06 E N 26 55 E N 16 26 W	1,705 2,552 3,572	Pearson. Seth. Sara.
2	38 50 56.28	76 14 22.26	N 44 39 W S 22 58 W S 18 57 E	S 44 39 E N 22 58 E N 18 57 W	1,553 2,508 3,657	Pearson. Seth. Sara.
3	38 51 16.84	76 14 13.96	N 72 34 W S 21 45 W S 13 08 E	S 72 34 E N 21 44 E N 13 08 W	1,374 3,233 4,265	Pearson. Seth. Sara.
4	38 51 11.18	76 13 58.00	N 70 49 W S 29 56 W S 7 52 E	S 70 49 E N 29 55 E N 7 52 W	1,833 3,244 3,999	Pearson. Seth. Sara.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SEA TURTLE.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° /	° /	Yards.	
1	38 51 02.58	76 15 23.66	N 30 37 E	S 30 37 W	1,037	Pearson.
			N 39 03 W	S 39 03 E	759	Dixon.
			S 61 55 W	N 61 54 E	1,471	Rich Neck Water Tank.
2	38 51 07.98	76 15 26.28	N 40 03 W	S 40 03 E	927	Pearson.
			N 45 07 W	S 45 07 E	577	Dixon.
			S 54 33 W	N 54 33 E	1,508	Rich Neck Water Tank.
3	38 51 13.84	76 15 06.67	N 8 52 E	S 8 52 W	519	Pearson.
			N 77 14 W	S 77 15 E	949	Dixon.
			S 58 27 W	N 58 26 E	2,048	Rich Neck Water Tank.
4	38 51 08.58	76 15 03.15	N 1 04 W	S 1 04 E	600	Pearson.
			N 69 12 W	S 69 12 E	1,089	Dixon.
			S 64 03 W	N 64 03 E	2,045	Rich Neck Water Tank.

BOZMAN NECK.

(Miles River—Chart No. 32.)

	° / "	° / "	° /	° /	Yards.	
1	38 50 31.80	76 15 13.30	N 7 31 E	S 7 31 W	1,947	Pearson.
			N 24 47 W	S 24 47 E	1,792	Dixon.
			N 77 36 W	S 77 37 E	1,609	Rich Neck Water Tank.
2	38 50 47.10	76 15 33.18	N 28 51 E	S 28 51 W	1,615	Pearson.
			N 11 33 W	S 11 33 E	1,135	Dixon.
			S 80 44 W	N 80 44 E	1,061	Rich Neck Water Tank.
3	38 50 53.96	76 15 23.76	N 24 09 E	S 24 09 W	1,296	Pearson.
			N 28 23 W	S 28 23 E	1,001	Dixon.
			S 72 45 W	N 72 45 E	1,356	Rich Neck Water Tank.
4	38 50 44.02	76 15 10.12	N 6 25 E	S 6 25 W	1,528	Pearson.
			N 34 30 W	S 34 30 E	1,474	Dixon.
			S 87 41 W	N 87 41 E	1,656	Rich Neck Water Tank.
5	38 50 35.58	76 15 06.92	N 2 45 E	S 2 45 W	1,804	Pearson.
			N 31 31 W	S 31 31 E	1,760	Dixon.
			N 82 51 W	S 82 52 E	1,753	Rich Neck Water Tank.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HAMBLETON HILL.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 49 54.92	76 14 28.06	N 16 28 W S 73 50 W N 80 53 E	S 16 28 E N 73 49 E S 80 54 W	3,309 860 2,579	Pearson. Seth. Herr.
2	38 50 10.40	76 14 47.90	N 8 54 W S 21 39 W S 87 53 E	S 8 54 E N 21 39 E N 87 52 W	2,685 819 3,071	Pearson. Seth. Herr.
3	38 50 40.48	76 14 09.46	N 41 06 W S 36 33 W S 61 14 E	S 41 07 E N 36 32 E N 61 14 W	2,173 2,210 2,345	Pearson. Seth. Herr.
4	38 50 44.92	76 13 48.08	N 53 15 W S 44 19 W S 49 24 E	S 53 15 E N 44 18 E N 49 24 W	2,487 2,691 1,904	Pearson. Seth. Herr.
5	38 50 31.34	76 13 45.54	N 46 37 W S 53 00 W S 60 04 E	S 46 38 E N 52 59 E N 60 03 W	2,834 2,439 1,644	Pearson. Seth. Herr.
6	38 50 15.46	76 14 13.72	N 27 57 W S 52 15 W S 82 32 E	S 27 57 E N 52 14 E N 82 31 W	2,808 1,522 2,186	Pearson. Seth. Herr.

WEST END.

(Miles River—Chart No. 32.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 49 43.94	76 12 45.04	N 51 08 E N 12 25 W S 53 28 W	S 51 08 W S 12 25 E N 53 27 E	1,903 797 1,714	Wood. Herr. Sara.
2	38 49 57.00	76 13 59.42	S 78 55 W S 21 51 E N 79 18 E	N 78 54 E N 21 50 W S 79 19 W	1,611 1,574 1,822	Seth. Sara. Herr.
3	38 50 36.08	76 13 06.98	S 61 14 W S 22 34 E S 87 50 E	N 61 13 E N 22 34 W N 87 50 W	3,381 1,061 1,949	Seth. Herr. Frank.
4	38 50 07.02	76 12 51.54	N 59 31 E N 20 33 E S 79 08 W	S 59 32 W S 20 33 W N 79 07 E	1,787 2,270 3,433	Frank. Benn. Seth.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HAMBLETON.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & C. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 49 23.80	76 14 15.36	S 71 17 E N 56 36 E N 55 06 W	N 71 16 W S 56 37 W S 55 06 E	1,062 2,649 1,415	Sara. Herr. Seth.
2	38 49 28.52	76 14 39.72	S 73 07 E N 65 32 E N 38 32 W	N 73 07 W S 65 33 W S 38 32 E	1,722 3,135 832	Sara. Herr. Seth.
3	38 49 38.20	76 14 40.12	S 63 31 E N 71 16 E N 57 26 W	N 63 31 W S 71 17 W S 57 27 E	1,854 3,024 601	Sara. Herr. Seth.
4	38 49 37.82	76 13 13.44	N 30 24 E N 83 08 W S 37 39 W	S 30 24 W S 83 09 E N 37 38 E	1,142 2,815 1,028	Herr. Seth. Sara.
5	38 49 32.02	76 13 09.72	N 49 35 W S 10 19 E N 22 07 E	N 49 34 E N 10 19 W S 22 07 W	954 1,065 1,274	Sara. Spar. Herr.

TIDEMILL.

(Miles River—Chart No. 32.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 48 37.48	76 13 02.90	S 61 09 E N 5 40 E N 36 34 W	N 61 09 W S 5 40 W S 36 34 E	197 3,035 1,520	Spar. Herr. Sara.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 49 14.48	76 13 35.54	N 63 03 W S 59 08 W S 37 35 E	N 63 04 E N 59 08 E N 37 35 W	2,480 51 1,694	Seth. Sara. Spar.
3	38 49 18.46	76 13 41.28	S 33 36 E N 38 42 E N 64 20 W	N 33 36 W S 38 43 W S 64 20 E	194 2,099 2,286	Sara. Herr. Seth.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 49 14.74	76 14 14.88	S 87 57 E N 51 16 E N 46 27 W	N 87 57 W S 51 17 W S 46 28 E	994 2,818 1,619	Sara. Herr. Seth.
5	38 49 19.10	76 14 15.08	S 79 39 E N 53 44 E N 50 17 W	N 79 38 W S 53 45 W S 50 17 E	1,015 2,733 1,518	Sara. Herr. Seth.
6	38 49 25.66	76 13 36.92	N 71 02 W S 0 57 W S 31 53 E	S 71 03 E N 0 57 E N 31 54 W	2,300 402 2,025	Seth. Sara. Spar.
7	38 48 48.26	76 12 49.34	N 55 50 W S 22 04 W S 13 48 E	S 55 50 E N 22 04 E N 13 48 W	1,528 494 1,065	Sara. Spar. Deewat.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SCOTLAND.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 48 27.86	76 12 50.08	S 38 19 E N 68 47 E N 0 40 W	N 38 19 W S 68 48 W S 0 40 E	441 1,447 3,344	Deewat. Ollie. Herr.
Thence from corner No. 1 along the mean low-water line of the shore to corner No. 2, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
2	38 48 37.48	76 13 02.90	S 61 09 E N 5 40 E N 36 34 W	N 61 09 W S 5 40 W S 36 34 E	197 3,035 1,520	Spar. Herr. Sara.
3	38 48 48.26	76 12 49.34	N 55 50 W S 22 04 W S 13 48 E	S 55 50 E N 22 04 E N 13 48 W	1,528 494 1,065	Sara. Spar. Deewat.
4	38 48 41.30	76 12 31.26	N 57 53 W S 71 22 W S 15 35 W	S 57 54 E N 71 21 E N 15 35 E	2,055 700 830	Sara. Spar. Deewat.

DEEP WATER POINT.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	° / "	° / "	Yards.	
1	38 48 00.00	76 12 40.70	N 82 19 E N 2 31 E S 22 13 W	S 82 20 W S 2 31 W N 22 13 E	1,079 594 650	Swing. Deewat. Millwind.
2	38 48 10.35	76 12 49.92	S 0 08 W S 81 09 E N 47 49 E	N 0 08 E N 81 08 W S 47 50 W	951 1,330 363	Millwind. Swing. Deewat.
3	38 48 13.76	76 12 45.06	S 6 59 W S 74 54 E N 47 32 E	N 6 59 E N 74 54 W S 47 32 W	1,074 1,228 191	Millwind. Swing. Deewat.
4	38 48 03.59	76 12 32.86	S 32 04 W N 88 28 E N 20 57 W	N 32 03 E S 88 28 W S 20 57 E	853 864 505	Millwind. Swing. Deewat.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ASH CRAFT.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 47 29.22	76 12 37.86	N 36 19 W S 69 19 W S 30 02 E	S 36 19 E N 69 19 E N 30 02 W	541 1,579 2,198	Millwind. St. Michaels Water Tank. Stony.
2	38 47 36.30	76 12 50.26	N 1 55 E S 55 18 W S 33 41 E	S 1 55 W N 55 18 E N 33 41 W	198 1,400 2,573	Millwind. St. Michaels Water Tank. Stony.
3	38 47 51.46	76 12 34.16	N 64 17 E N 9 26 W S 53 08 W	S 64 18 W S 9 26 E N 53 09 E	996 893 523	Swing. Deewat. Millwind.
4	38 47 44.54	76 12 22.04	N 72 06 E N 22 42 W S 83 48 W	S 72 06 W S 22 42 E N 83 47 E	897 1,208 743	Fair. Deewat. Millwind.

SECOND POINT.

(Miles River—Charts Nos. 32 and 34.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 47 13.02	76 12 07.27	N 48 56 W S 89 43 W S 12 11 E	S 48 57 E N 89 42 E N 12 11 W	1,496 2,286 1,388	Millwind. St. Michaels Water Tank. Stony.
2	38 47 25.98	76 12 21.26	N 54 17 W S 76 50 W S 20 16 E	S 54 17 E N 76 49 E N 20 16 W	935 1,907 1,912	Millwind. St. Michaels Water Tank. Stony.
3	38 47 52.66	76 12 09.96	N 89 49 E N 43 02 W S 71 29 W	S 89 49 W S 43 03 E N 71 28 E	534 1,150 1,114	Fair. Deewat. Millwind.
4	38 47 19.28	76 11 54.46	N 32 37 E N 62 15 W S 1 40 W	S 32 37 W S 62 15 E N 1 40 E	1,005 1,657 1,568	Leeds. Millwind. Stony.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WILD GROUND.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 48 47.60	76 12 39.90	N 6 29 W	S 6 29 E	2,696	Herr.
			N 59 49 W	S 59 49 E	1,750	Sara.
			S 44 55 W	N 44 55 E	616	Spar.
2	38 49 15.62	76 12 56.20	N 4 03 E	S 4 03 W	1,738	Herr.
			S 86 34 W	N 86 33 E	1,085	Sara.
			S 0 12 W	N 0 12 E	1,381	Spar.
3	38 49 49.44	76 12 22.26	N 27 08 E	S 27 08 W	1,684	Frank.
			N 52 29 W	S 52 30 E	973	Herr.
			S 58 39 W	N 58 38 E	2,316	Sara.
4	38 49 41.90	76 12 09.46	N 23 16 E	S 23 16 W	1,375	Wood.
			N 52 39 W	S 52 39 E	1,397	Herr.
			S 67 40 W	N 67 39 E	2,503	Sara.

SYCAMORE.

(Miles River—Chart No. 32.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 49 41.90	76 12 09.46	N 23 16 E S 52 39 W S 67 40 W	S 23 16 W S 52 39 E N 67 39 E	1,375 1,397 2,503	Wood. Herr. Sara.
2	38 49 49.44	76 12 22.26	N 27 08 E N 52 29 W S 58 39 W	S 27 08 W S 52 30 E N 58 38 E	1,684 973 2,316	Frank. Herr. Sara.
3	38 50 20.14	76 12 06.56	S 69 33 W S 86 44 W N 37 21 E	N 69 32 E N 86 44 E S 37 21 W	1,266 467 583	Herr. Wood. Frank.
4	38 50 19.38	76 11 48.90	N 12 52 W S 75 50 W S 4 42 W	S 12 52 E N 75 50 E N 4 41 E	502 1,704 3,249	Frank. Herr. Ollie.
Thence from corner No. 4 along the mean low water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 49 46.54	76 11 32.30	N 21 34 W N 71 43 W S 18 17 W	S 21 34 E S 71 44 E N 18 17 E	1,190 2,201 2,243	Wood. Herr. Ollie.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

EAST END.

(Miles River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 49 43.94	76 12 45.04	N 51 08 E	S 51 08 W	1,993	Wood.
			N 12 25 W	S 12 25 E	797	Herr.
			S 53 28 W	N 53 27 E	1,714	Sara.
2	38 50 07.02	76 12 51.54	N 59 31 E	S 59 32 W	1,787	Frank.
			N 20 33 E	S 20 33 W	2,270	Benn.
			S 79 08 W	N 79 07 E	3,433	Seth.
3	38 50 13.58	76 12 35.30	N 10 57 E	S 10 57 W	1,940	Benn.
			S 62 41 W	N 62 41 E	482	Herr.
			S 17 29 E	N 17 29 W	3,189	Ollie.
4	38 49 57.98	76 12 30.18	S 13 49 W	N 13 49 E	2,894	Spar.
			N 56 31 E	S 56 31 W	1,306	Wood.
			N 5 29 E	S 5 29 W	2,442	Benn.

HERRING ISLAND.

(Miles River—Chart No. 32.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 50 07.02	76 12 51.54	N 59 31 E N 20 33 E S 79 08 W	S 59 32 W S 20 33 W N 79 07 E	1,787 2,270 3,433	Frank. Benn. Seth.
2	38 50 36.08	76 13 06.98	S 61 14 W S 22 34 E S 87 50 E	N 61 13 E N 22 34 W N 87 50 W	3,381 1,061 1,949	Seth. Herr. Frank.
3	38 50 48.30	76 13 17.28	S 9 22 W S 77 40 E N 63 33 E	N 9 22 E N 77 39 W S 63 34 W	3,234 2,271 1,648	Sara. Frank. Benn.
Thence along county boundary as delineated on Chart No. 32 to corner No. 4.						
4	38 50 39.24	76 12 20.10	S 35 12 W S 75 46 E N 71 09 E	N 35 11 E N 75 45 W S 71 09 W	3,530 734 778	Sara. Frank. James.
5	38 50 13.58	76 12 35.30	N 10 57 E S 62 41 W S 17 29 E	S 10 57 W N 62 41 E N 17 29 W	1,940 482 3,189	Benn. Herr. Ollie.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WYE TOWN.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '		
1	38 50 19.38	76 11 48.90	N 12 52 W S 75 50 W S 4 42 W	S 12 52 E N 75 50 E N 4 41 E	502 1,704 3,249	Frank. Herr. Ollie.
2	38 50 20.14	76 12 06.56	S 69 33 W S 86 44 W N 37 21 E	N 69 32 E N 86 44 E S 37 21 W	1,266 467 583	Herr. Wood. Frank.
3	38 50 42.68	76 12 10.64	S 57 17 E N 74 25 E N 16 59 W	N 57 18 W S 74 26 W S 16 59 E	549 505 966	Frank. James. Benn.
4	38 51 07.40	76 11 52.90	S 80 02 E N 31 36 E N 83 11 W	N 80 02 W S 31 36 W S 83 11 E	483 973 755	Law. Bruffs. Benn.
5	38 51 02.72	76 11 45.58	N 75 19 E N 17 48 E N 75 17 W	S 75 19 W S 17 49 W S 75 18 E	293 1,037 975	Law. Bruffs. Benn.
6	38 50 46.70	76 11 52.20	N 36 41 E N 44 17 W S 49 29 W	S 36 41 W S 44 17 E N 49 28 E	767 1,100 2,059	Law. Benn. Herr.
Thence from corner No. 6 along the mean low water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide:						

BRUFFS ISLAND.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	° / '	° / '	Yards.	
	° / ' "	° / ' "	° / '	° / '		
1	38 51 02.72	76 11 45.58	N 75 19 E N 17 48 E N 75 17 W	S 75 19 W S 17 49 W S 75 18 E	293 1,037 975	Law. Bruffs. Benn.
2	38 51 07.40	76 11 52.90	S 80 02 E N 31 36 E N 83 11 W	N 80 02 W S 31 36 W S 83 11 E	483 973 755	Law. Bruffs. Benn.
3	38 51 41.96	76 11 39.82	N 2 29 E N 89 01 W S 37 04 W	S 2 29 W S 89 01 E N 37 04 E	888 431 921	Nose. Won. Hough.
4	38 51 43.96	76 11 25.88	S 85 42 W S 1 15 W N 62 46 E	N 85 42 E N 1 15 E S 62 46 W	801 352 482	Won. Shaw. South.
5	38 51 35.46	76 11 13.80	N 74 55 E N 12 14 E S 78 40 W	S 74 55 W S 12 14 W N 78 39 E	1,001 519 332	Edward. South. Shaw.
6	38 51 30.00	76 11 20.90	S 70 58 E N 68 55 E N 49 30 W	N 70 57 W S 68 55 W S 49 30 E	1,217 1,236 183	Colonel. Edward. Shaw.
Thence from corner No. 6 along the mean low water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide:						
7	38 51 20.02	76 11 32.06	N 5 36 W N 89 36 W S 8 12 W	S 5 36 E S 89 36 E N 8 12 E	406 759 514	Bruffs. Hough. Law.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SHAW BAY HILL.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 51 08.66	76 11 18.45	N 73 27 E N 9 22 E N 88 22 W	S 73 27 W S 9 22 W S 88 23 E	1 133 1,430 1,659	Colonel. South. Benn.
2	38 51 14.64	76 11 18.42	N 83 38 E N 30 21 E N 10 51 E	S 83 38 W S 30 21 W S 10 51 W	1,091 2,037 1,231	Colonel. Flat. South.
3	38 51 14.62	76 11 11.94	N 82 25 E N 26 01 E N 2 53 E	S 82 25 W S 26 01 W S 2 53 W	922 1,958 1,212	Colonel. Flat. South.
4	38 51 08.78	76 11 12.28	N 70 57 E N 2 51 E N 88 39 W	S 70 57 W S 2 51 W S 88 40 E	977 1,409 1,821	Colonel. South. Benn.

RACE HORSE (Talbot County).

(Wye River—Chart No. 32.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 51 21.58	76 10 55.52	S 76 47 E N 33 35 E N 20 53 W	N 76 47 W S 33 35 W S 20 53 E	493 875 1,039	Colonel. Edward. South.
2	38 51 41.04	76 10 59.44	N 82 59 E N 40 06 W S 70 13 W	S 83 00 W S 40 06 E N 70 12 E	592 417 749	Edward. South. Shaw.
Thence along county boundary as delineated on Chart No. 32 to corner No. 3.						
3	38 51 56.76	76 10 34.74	S 8 00 W N 57 01 E N 19 54 W	N 8 00 E S 57 02 W S 19 54 E	463 753 360	Edward. Albert. Flat.
4	38 51 53.40	76 10 16.98	S 57 06 W S 19 07 E N 17 25 E	N 57 05 E N 19 07 W S 17 25 W	634 440 549	Edward. Lloyd. Albert.
5	38 51 44.00	76 10 18.00	N 47 24 E N 12 40 E N 36 16 W	S 47 25 W S 12 40 W S 36 16 E	1,001 862 953	Cousin. Albert. Flat.
Thence from corner No. 5 along the mean low water line of the shore to corner No. 6, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide						
6	38 51 43.18	76 10 37.18	N 38 44 E N 4 09 W N 73 53 W	S 38 44 W S 4 09 E S 73 54 E	1,113 798 890	Albert. Flat. South.
7	38 51 29.42	76 10 39.24	N 6 41 E N 48 25 W S 7 48 E	S 6 41 W S 48 26 E N 7 48 W	467 1,072 381	Edward. South. Colonel.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WINDERS BANK.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 51 49.42	76 10 01.20	N 30 43 E N 20 56 W S 44 03 W	S 30 43 W S 20 57 E N 44 03 E	575 704 392	Cousin. Albert. Lloyd.
2	38 51 55.86	76 10 09.00	S 7 36 W N 60 57 E N 5 59 W	N 7 36 E S 60 57 W S 5 59 E	503 572 443	Lloyd. Cousin. Albert.
3	38 52 10.38	76 10 01.42	Thence along county boundary as delineated on Chart No. 32		367	Cousin.
			S 54 43 E N 28 00 E N 47 03 W	N 54 43 W S 28 00 W S 47 04 E	226 329	Baldwins. Le Seur.
4	38 52 10.62	76 09 57.20	S 40 34 E N 1 35 W S 80 56 W	N 40 34 W S 1 35 E N 80 56 E	290 191 362	Cousin. Baldwins. Albert.
5	38 51 59.68	76 09 48.34	N 16 52 W N 62 10 W S 44 15 W	S 16 52 E S 62 10 E N 44 15 E	155 668 876	Cousin. Albert. Lloyd.

POPLAR POINT.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 52 18.68	76 09 56.06	N 28 19 E N 29 06 W S 23 40 W	S 28 19 W S 29 06 E N 23 40 E	287 344 87	Sylvia. Attila. Baldwins.
2	38 52 20.62	76 10 01.72	N 4 25 W S 62 33 W S 37 57 E	S 4 25 E N 62 33 E N 37 57 W	236 262 185	Attila. Le Seur. Baldwins.
3	38 52 26.50	76 09 57.10	Thence along county boundary as delineated on Chart No. 32		344	Baldwins.
			S 1 19 W S 85 52 E N 41 24 E	N 1 19 E N 85 52 W S 41 24 W	163 490	Sylvia. Gusta.
4	38 52 52.64	76 09 45.28	Thence along county boundary as delineated on Chart No. 32		396	to corner No. 4.
			S 89 31 W S 26 53 E N 43 23 E	N 89 31 E N 26 53 W S 43 23 W	265 280	Sang. Nodim. Go.
5	38 52 52.48	76 09 30.12	Thence along county boundary as delineated on Chart No. 32		523	to corner No. 5.
			N 65 37 E N 44 54 W S 50 31 W	S 65 37 W S 44 54 E N 50 31 E	294 362	Divide. Go. Nodim.
6	38 52 47.54	76 09 30.62	S 80 45 E N 51 59 E N 27 25 W	N 80 45 W S 51 59 W S 27 25 E	611 621 422	Quarter. Divide. Go.
7	38 52 48.08	76 09 41.54	S 14 04 E N 14 39 E N 31 06 W	N 14 04 W S 14 39 W S 31 06 E	86 369 451	Nodim. Go. Turn.
8	38 52 32.68	76 09 47.50	N 23 59 E N 53 18 W S 22 12 W	S 23 59 W S 53 18 E N 22 12 E	174 359 237	Gusta. Tobins. Sylvia.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

JUNIPER.

(Wye River—Chart No. 32.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 52 46.56	76 09 09.86	N 61 11 W	S 61 11 E	846	Go. Quarter. Deck.
			S 40 31 E	N 40 31 W	85	
			N 50 45 E	S 50 45 W	387	
2	38 52 49.82	76 09 12.98	N 65 41 W	S 65 41 E	724	Go. Quarter. Deck.
			S 38 14 E	N 38 14 W	223	
			N 70 33 E	S 70 33 W	405	
3	38 52 57.10	76 09 01.18	N 9 49 W	S 9 49 E	247	Princess. Divide. Deck.
			N 78 11 W	S 78 11 E	293	
			S 32 40 E	N 32 40 W	131	
4	38 52 54.80	76 08 58.88	N 17 45 W	S 17 45 E	338	Princess. Divide. Deck.
			N 68 24 W	S 68 24 E	374	
			S 17 17 E	N 17 17 W	34	

POPLAR ISLAND NARROWS.

(Chesapeake Bay—Vicinity Poplar Island—Chart No. 33.)

	° / //	° / //	° /	° /	Yards.	
1	38 44 39.07	76 20 37.00	N 7 13 E	S 7 13 W	577	Great. Valliant. Front.
			N 50 49 W	N 50 51 E	5,069	
			S 0 30 E	N 0 30 W	1,280	
2	38 44 43.23	76 20 53.90	S 17 51 E	N 17 51 W	1,492	Front. Great. Haddaway.
			N 50 12 E	S 50 12 W	676	
			N 18 18 E	S 18 18 W	3,912	
3	38 44 50.35	76 21 22.52	S 36 10 E	N 36 10 W	2,056	Front. Great. Haddaway.
			N 81 25 E	S 81 26 W	1,289	
			N 29 44 E	S 29 44 W	4,000	
4	38 45 32.22	76 22 03.07	S 65 03 W	N 65 03 E	1,179	Poplar South. Great. Haddaway.
			S 62 32 E	N 62 31 W	2,643	
			N 55 58 E	S 56 00 W	3,685	
5	38 47 09.33	76 21 17.76	S 14 20 E	N 14 20 W	4,639	Great. Haddaway. Kemp Tower.
			S 56 52 E	N 56 52 W	2,210	
			N 46 41 E	S 46 43 W	7,455	
6	38 47 16.80	76 20 36.40	S 27 37 E	N 27 37 W	1,654	Haddaway. Kemp Tower. Bloody Point Bar Light.
			N 41 42 E	S 41 44 W	6,497	
			N 39 44 W	S 39 46 E	7,208	
7	38 46 06.70	76 20 50.90	S 60 48 W	N 60 47 E	3,402	Poplar South. Great. Haddaway.
			S 10 28 E	N 10 28 W	2,422	
			N 51 58 E	S 51 58 W	1,459	
8	38 46 03.46	76 20 20.90	N 19 31 E	S 19 31 W	1,070	Haddaway. Poplar South. Great.
			S 67 36 W	N 67 34 E	4,068	
			S 8 49 W	N 8 49 E	2,300	

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

POPLAR ISLAND NARROWS—Continued.

(Chesapeake Bay—Vicinity Poplar Island—Chart No. 33)—Continued.

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
9	38 45 45.58	76 20 17.42	N 9 21 E S 76 11 W S 14 54 W	S 9 21 W N 76 13 E N 14 54 E	1,633 3,968 1,728	Haddaway. Poplar South. Great.
10	38 45 04.40	76 20 39.70	N 15 53 E S 58 40 W S 2 12 E	S 15 53 W S 58 41 E N 2 12 W	3,119 4,515 2,135	Haddaway. Valliant. Front.

BAY HUNDRED.

(Chesapeake Bay—Vicinity Poplar Island—Chart No. 33.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 42 49.30	76 21 17.92	S 36 04 E N 24 16 E N 24 19 W	N 36 04 W S 24 16 W S 24 20 E	1,124 2,657 5,483	Wap. Front. Poplar South.
2	38 43 14.68	76 22 06.60	S 47 50 E N 56 37 E N 13 16 W	N 47 50 W S 56 38 W S 13 16 E	2,628 2,848 4,254	Wap. Front. Poplar South.
3	38 44 20.44	76 21 22.35	S 61 41 E N 46 37 E N 48 09 W	N 61 41 W S 46 37 W S 48 09 E	1,374 1,748 2,882	Front. Great. Poplar South.
4	38 44 50.35	76 21 22.52	S 36 10 E N 81 25 E N 29 44 E	N 36 10 W S 81 26 W S 29 44 W	2,056 1,289 4,000	Front. Great. Haddaway.
5	38 44 43.23	76 20 53.90	S 17 51 E N 50 12 E N 18 18 E	N 17 51 W S 50 12 W S 18 18 W	1,492 676 3,912	Front. Great. Haddaway.
6	38 43 28.42	76 20 41.93	N 7 17 E N 41 05 W S 7 24 W	S 7 17 W S 41 06 E N 7 24 E	1,112 4,880 2,246	Front. Poplar South. Wap.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PONE.

(Chesapeake Bay—Off Tilghman Island—Chart No. 33.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 40 32.40	76 21 36.58	S 18 42 W S 65 21 E N 17 18 E	N 18 41 E N 65 20 W S 17 18 W	4,602 2,090 3,883	Sharps Island Light. Black. Wap.
2	38 41 18.60	76 22 39.92	S 1 38 E S 55 48 E N 52 46 E	N 1 38 W N 55 47 W S 52 47 W	6,004 4,321 3,553	Sharps Island Light. Black. Wap.
3	38 43 14.68	76 22 06.60	S 47 50 E N 56 37 E N 13 16 W	N 47 50 W S 56 38 W S 13 16 E	2,628 2,848 4,254	Wap. Front. Poplar South.
4	38 42 49.30	76 21 17.92	S 36 04 E N 24 16 E N 24 19 W	N 36 04 W S 24 16 W S 24 20 E	1,124 2,657 5,483	Wap. Front. Poplar South.

STONE.

(Chesapeake Bay—Vicinity Sharps Island—Charts Nos. 33 and 36.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 37 35.72	76 24 17.16	S 75 41 E N 86 28 E N 29 11 E	N 75 40 W S 86 32 W S 29 13 W	3,986 10,825 11,070	Jere. Chef. Wap.
2	38 38 33.84	76 24 01.16	S 49 25 E S 79 07 E N 32 51 E	N 49 24 W N 79 06 W S 32 53 W	4,529 2,363 0,172	Jere. Sharps Island Light. Wap.
3	38 40 14.30	76 22 52.76	S 7 36 E S 86 11 E N 36 16 E	N 7 36 W N 86 09 W S 36 17 W	3,807 3,922 5,355	Sharps Island Light. Black. Wap.
4	38 40 04.04	76 21 54.70	S 16 22 W N 87 57 E N 19 18 E	N 16 22 E S 87 58 W S 19 19 W	3,635 2,382 4,942	Sharps Island Light. Black. Wap.
5	38 38 44.36	76 22 11.12	S 36 24 W S 9 05 E N 45 25 E	N 36 23 E N 9 05 W S 45 26 W	994 3,342 3,949	Sharps Island Light. Jere. Black.
6	38 38 54.12	76 21 13.58	S 15 19 W S 71 39 E N 27 54 E	N 15 19 E N 71 36 W S 27 55 W	3,763 6,266 2,758	Jere. Chef. Black.
7	38 38 34.48	76 21 08.08	N 20 15 E S 78 18 W S 21 01 W	S 20 15 W N 78 17 E N 21 01 E	3,399 2,395 3,178	Black. Sharps Island Light. Jere.
8	38 37 41.36	76 21 56.68	N 86 07 E N 26 24 E N 36 17 W	S 86 10 W S 26 25 W S 36 18 E	7,104 5,407 1,646	Chef. Black. Sharps Island Light.
9	38 37 39.48	76 22 45.64	S 52 21 E N 86 18 E N 17 21 E	N 52 20 W S 86 21 W S 17 22 W	1,816 8,400 9,993	Jere. Chef. Wap.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BLACK WALNUT.

(Outer Choptank River—Charts Nos. 33, 36, and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 39 19.32	76 18 25.64	N 18 55 W N 63 10 W S 73 11 W	S 18 55 E S 63 12 E N 73 13 E	4,354 3,529 6,847	Bar. Black. Sharps Island Light.
2	38 39 32.44	76 19 53.16	N 13 47 E N 35 58 W S 60 15 W	S 13 47 W S 35 58 E N 60 13 E	3,786 1,422 4,882	Bar. Black. Sharps Island Light.
3	38 40 30.48	76 20 13.35	N 13 01 W S 20 30 W S 39 50 E	S 13 01 E N 20 30 E N 39 48 W	2,224 861 6,798	Southern M. E. Church. Black. Chef.
4	38 40 30.20	76 18 36.52	N 33 01 W S 74 26 W S 55 06 W	S 33 02 E N 74 25 E N 55 03 E	2,061 2,970 7,640	Bar. Black. Sharps Island Light.
5	38 40 05.28	76 17 58.64	N 39 36 W N 89 22 W S 64 05 W	S 39 37 E S 89 23 E N 64 02 E	3,333 3,864 8,081	Bar. Black. Sharps Island Light.
6	38 39 29.24	76 17 58.36	N 29 27 W N 71 59 W S 72 20 W	S 29 28 E S 72 01 E N 72 17 E	4,336 4,009 7,636	Bar. Black. Sharps Island Light.

SANDS.

(Outer Choptank River—Chart No. 33.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 40 05.28	76 17 58.64	N 39 36 W N 89 22 W S 64 05 W	S 39 37 E S 89 23 E N 64 02 E	3,333 3,864 8,081	Bar. Black. Sharps Island Light.
2	38 40 30.20	76 18 36.52	N 33 01 W S 74 26 W S 55 06 W	S 33 02 E N 74 25 E N 55 03 E	2,061 2,970 7,640	Bar. Black. Sharps Island Light.
3	38 41 30.48	76 18 56.80	N 28 10 E N 37 16 W S 62 38 W	S 28 11 W S 37 17 E N 62 38 E	3,509 2,700 662	Change 1910. Avalon. Bar.
4	38 41 48.84	76 17 59.20	N 78 54 E N 3 07 E S 66 20 W	S 78 56 W S 3 07 W N 66 20 E	2,791 2,478 2,304	Nelson 3. Change 1910. Bar.
5	38 40 56.92	76 17 58.88	N 1 43 E N 68 40 W S 66 14 W	S 1 43 W S 68 41 E N 66 12 E	4,227 2,274 4,214	Change 1910. Bar. Black.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PLEASANT HILL.

(Outer Choptank River—Charts Nos. 33, 34, and 36.)

Corner of bar	Latitude	Longitude	True bearing		Distance *	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 40 04.20	76 17 01.08	N 16 28 E	S 16 29 W	4,240	Nelson 3.
			N 54 28 W	S 54 29 E	4,480	Bar.
			N 89 10 W	S 89 11 E	5,385	Black.
2	38 40 05.28	76 17 58.64	N 39 36 W	S 39 37 E	3,333	Bar.
			N 89 22 W	S 89 23 E	3,864	Black.
			S 64 05 W	N 64 02 E	8,081	Sharps Island Light.
3	38 40 56.92	76 17 58.88	N 1 43 E	S 1 43 W	4,227	Change 1910.
			N 68 40 W	S 68 41 E	2,274	Bar.
			S 66 14 W	N 66 12 E	4,214	Black.
4	38 40 57.06	76 17 00.88	N 27 40 E	S 27 41 W	2,578	Nelson 3.
			N 77 19 W	S 77 20 E	3,743	Bar.
			S 72 27 W	N 72 25 E	5,653	Black.
5	38 40 14.76	76 17 01.00	N 17 56 E	S 17 56 W	3,899	Nelson 3.
			N 58 21 W	S 58 23 E	4,286	Bar.
			S 87 03 W	N 87 01 E	5,394	Black.

CHURCH HILL.

(Outer Choptank River—Charts Nos. 33 and 34.)

	° / "	° / "	° / "		Yards.	
			° / "	° / "		
1	38 40 56.92	76 17 58.88	N 1 43 E	S 1 43 W	4,227	Change 1910.
			N 68 40 W	S 68 41 E	2,274	Bar.
			S 66 14 W	N 66 12 E	4,214	Black.
2	38 41 48.84	76 17 59.20	N 78 54 E	S 78 56 W	2,791	Nelson 3.
			N 3 07 E	S 3 07 W	2,478	Change 1910.
			S 66 20 W	N 66 20 E	2,304	Bar.
3	38 41 54.74	76 17 00.72	N 74 10 E	S 74 11 W	1,240	Nelson 3.
			N 31 48 W	S 31 48 E	2,677	Change 1910.
			S 72 55 W	N 72 54 E	3,824	Bar.
4	38 40 57.06	76 17 00.88	N 27 40 E	S 27 41 W	2,578	Nelson 3.
			N 77 19 W	S 77 20 E	3,743	Bar.
			S 72 27 W	N 72 25 E	5,653	Black.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WILD CHERRY TREE.

(Entrance Harris Creek—Chart No. 33.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 41 30.48	76 18 56.80	N 28 10 E N 37 16 W S 62 38 W	S 28 11 W S 37 17 E N 62 38 E	3,509 2,709 662	Change 1910. Avalon. Bar.
2	38 42 38.54	76 18 45.48	N 59 33 E N 47 25 W S 85 52 W	S 59 33 W S 47 25 E N 85 52 E	1,575 1,534 1,944	Change 1910. Narrows. Avalon.
3	38 42 49.28	76 18 17.26	S 64 58 E N 54 32 E N 20 47 W	N 64 57 W S 54 32 W S 20 47 E	3,549 751 2,232	Nelson 3. Change 1910. Eagle.
4	38 42 16.70	76 18 07.44	S 82 15 E N 12 56 E N 50 16 W	N 82 13 W S 12 56 W S 50 16 E	2,990 1,575 2,776	Nelson 3. Change 1910. Narrows.
5	38 41 48.84	76 17 59.20	N 78 54 E N 3 07 E S 66 20 W	S 78 56 W S 3 07 W N 66 20 E	2,791 2,478 2,304	Nelson 3. Change 1910. Bar.

TURNROW.

(Entrance Harris Creek—Charts Nos. 33 and 34.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 42 16.70	76 18 07.44	S 82 15 E N 12 56 E N 50 16 W	N 82 13 W S 12 56 W S 50 16 E	2,990 1,575 2,776	Nelson 3. Change 1910. Narrows.
2	38 42 49.28	76 18 17.26	S 64 58 E N 54 32 E N 20 47 W	N 64 57 W S 54 32 W S 20 47 E	3,549 751 2,232	Nelson 3. Change 1910. Eagle.
3	38 42 44.24	76 17 39.02	N 33 19 W N 73 40 W S 43 26 W	S 33 20 E S 73 41 E N 43 25 E	725 3,007 3,845	Change 1910. Narrows. Bar.
4	38 42 23.58	76 17 32.14	S 72 35 E N 24 00 W N 63 18 W	N 72 34 W S 24 01 E S 63 19 E	2,120 1,426 3,433	Nelson 3. Change 1910. Narrows.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

TILGHMAN WHARF.

(Entrance Harris Creek—Chart No. 33.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 41 30.48	76 18 56.80	N 28 10 E N 37 16 W S 62 38 W	S 28 11 W S 37 17 E N 62 38 E	3,509 2,709 662	Change 1910. Avalon. Bar.
2	38 41 55.62	76 19 44.20	S 30 00 E N 52 20 E N 16 32 W	N 30 00 W S 52 21 W S 16 32 E	1,330 3,674 1,364	Bar. Change 1910. Avalon.
3	38 42 15.82	76 19 50.27	S 24 15 E N 63 00 E N 19 59 W	N 24 15 W S 63 01 W S 19 59 E	2,010 3,445 666	Bar. Change 1910. Avalon.
4	38 42 45.90	76 19 41.50	S 49 46 W S 11 47 E S 79 02 E	N 49 46 E N 11 47 W N 79 03 W	601 2,909 2,890	Avalon. Bar. Change 1910.
5	38 43 09.63	76 19 11.75	S 46 20 W S 83 02 E N 24 48 E	N 46 20 E N 83 01 W S 24 48 W	1,721 2,067 1,543	Avalon. Change 1910. Eagle.
6	38 42 38.54	76 18 45.48	N 59 33 E N 47 25 W S 85 52 W	S 59 33 W S 47 25 E N 85 52 E	1,575 1,534 1,944	Change 1910. Narrows. Avalon.

CHANGE.

(Harris Creek—Chart No. 33.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 42 38.54	76 18 45.48	N 59 33 E N 47 25 W S 85 52 W	S 59 33 W S 47 25 E N 85 52 E	1,575 1,534 1,944	Change 1910. Narrows. Avalon.
2	38 43 31.82	76 18 32.34	S 45 20 E N 77 36 E N 27 57 E	N 45 20 W S 77 36 W S 27 58 W	1,421 903 2,442	Change 1910. Hen. Ball.
3	38 43 39.24	76 18 18.86	S 27 39 E S 83 53 E N 22 28 E	N 27 39 W N 83 53 W S 22 29 W	1,410 528 2,064	Change 1910. Hen. Ball.
4	38 43 22.44	76 18 02.20	N 8 02 E N 50 50 W S 78 59 W	S 8 02 W S 50 51 E N 78 58 E	2,498 1,534 2,315	Ball. Eagle. Narrows.
5	38 42 49.28	76 18 17.26	S 64 58 E N 54 32 E N 20 47 W	N 64 57 W S 54 32 W S 20 47 E	3,549 751 2,232	Nelson 3. Change 1910. Eagle.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

EAGLE POINT.

(Harris Creek—Chart No. 33.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 43 31.82	76 18 32.34	S 45 20 E N 77 36 E N 27 57 E	N 45 20 W S 77 36 W S 27 58 W	1,421 903 2,442	Change 1910. Hen. Ball.
2	38 43 32.42	76 19 00.68	S 59 55 E N 83 55 E N 41 33 E	N 59 54 W S 83 56 W S 41 33 W	2,033 1,639 2,854	Change 1910. Hen. Ball.
3	38 43 42.98	76 18 58.40	S 51 01 E S 83 22 E N 45 50 E	N 51 00 W N 83 22 W S 45 51 W	2,185 1,580 2,556	Change 1910. Hen. Ball.
4	38 43 47.54	76 18 33.20	S 34 03 E S 69 37 E N 35 40 E	N 34 03 W N 69 36 W S 35 40 W	1,845 905 2,002	Change 1910. Hen. Ball.
5	38 44 11.83	76 18 36.80	S 40 52 E N 57 23 E N 16 32 E	N 40 52 W S 57 24 W S 16 32 W	1,528 1,499 2,001	Hen. Ball. Warrior.
6	38 44 09.12	76 18 21.80	S 29 33 E N 43 56 E N 28 46 W	N 29 33 W S 43 56 W S 28 46 E	1,224 1,249 1,351	Hen. Ball. Dunk.
7	38 43 39.24	76 18 18.86	S 27 39 E S 83 53 E N 22 28 E	N 27 39 W N 83 53 W S 22 29 W	1,410 528 2,064	Change 1910. Hen. Ball.

TURKEY NECK.

(Harris Creek—Chart No. 33.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 43 39.24	76 18 18.86	S 27 39 E S 83 53 E N 22 28 E	N 27 39 W N 83 53 W S 22 29 W	1,410 528 2,064	Change 1910. Hen. Ball.
2	38 44 09.12	76 18 21.80	S 29 33 E N 43 56 E N 28 46 W	N 29 33 W S 43 56 W S 28 46 E	1,224 1,249 1,351	Hen. Ball. Dunk.
3	38 44 04.26	76 17 55.44	N 44 57 W S 72 08 W S 5 54 W	S 44 58 E N 72 08 E N 5 54 E	1,906 1,438 904	Dunk. Eagle. Hen.
4	38 43 45.80	76 18 06.96	N 27 52 W N 80 18 W S 13 01 E	S 27 52 E S 80 19 E N 13 01 W	2,230 1,079 1,509	Dunk. Eagle. Change 1910.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MILL POINT.

(Harris Creek—Chart No. 33.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 44 04.26	76 17 55.44	N 44 57 W S 72 08 W S 5 54 W	S 44 58 E N 72 08 E N 5 54 E	1,906 1,438 904	Dunk. Eagle. Hen.
2	38 44 09.12	76 18 21.80	S 29 33 E N 43 56 E N 28 46 W	N 29 33 W S 43 56 W S 28 46 E	1,224 1,249 1,351	Hen. Ball. Dunk.
3	38 44 47.38	76 18 25.46	S 67 55 E N 20 34 E N 35 13 W	N 67 55 W S 20 34 W S 35 13 E	1,039 769 1,041	Ball. Warrior. Hawk.
4	38 44 51.00	76 18 00.90	N 59 44 W S 79 17 W S 31 15 W	S 59 45 E N 79 16 E N 31 15 E	1,446 1,224 2,360	Hawk. Dunk. Eagle.
5	38 44 36.98	76 17 55.72	N 49 04 W N 79 37 W S 41 23 W	S 49 05 E S 79 38 E N 41 23 E	1,834 1,362 2,059	Hawk. Dunk. Eagle.

HUNTS.

(Harris Creek—Chart No. 33.)

	° / //	° / //	° /	° /	Yards.	
1	38 44 09.12	76 18 21.80	S 29 33 E N 43 56 E N 28 46 W	N 29 33 W S 43 56 W S 28 46 E	1,224 1,249 1,351	Hen. Ball. Dunk.
2	38 44 11.83	76 18 36.80	S 40 52 E N 57 23 E N 16 32 E	N 40 52 W S 57 24 W S 16 32 W	1,528 1,499 2,001	Hen. Ball. Warrior.
3	38 44 19.42	76 18 54.98	S 46 22 E N 72 26 E N 32 16 E	N 46 21 W S 72 27 W S 32 16 W	2,045 1,828 1,966	Hen. Ball. Warrior.
4	38 44 25.50	76 18 42.80	S 35 37 E N 76 17 E N 26 32 E	N 35 37 W S 76 17 W S 26 32 W	1,988 1,463 1,629	Hen. Ball. Warrior.
5	38 44 33.24	76 18 44.02	S 32 23 E N 86 37 E N 32 26 E	N 32 22 W S 86 37 W S 32 26 W	2,223 1,456 1,417	Hen. Ball. Warrior.
6	38 44 38.50	76 18 55.12	S 35 50 E S 87 00 E N 45 57 E	N 35 49 W N 86 59 W S 45 57 W	2,534 1,749 1,465	Hen. Ball. Warrior.
Thence from corner No. 6 along the mean low-water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
7	38 44 44.25	76 18 46.42	S 79 21 E N 44 57 E N 2 48 W	N 79 20 W S 44 57 W S 2 48 E	1,543 1,166 958	Ball. Warrior. Hawk.
8	38 44 47.38	76 18 25.46	S 67 55 E N 20 34 E N 35 13 W	N 67 55 W S 20 34 W S 35 13 E	1,039 769 1,041	Ball. Warrior. Hawk.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SETHS POINT.

(Harris Creek—Chart No. 33.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 44 44.25	76 18 46.42	S 79 21 E N 44 57 E N 2 48 W	N 79 20 W S 44 57 W S 2 48 E	1,543 1,166 958	Ball. Warrior. Hawk.
2	38 45 06.30	76 18 44.22	S 54 48 E N 83 55 E N 7 06 E	N 54 48 W S 83 55 W S 7 06 W	1,785 770 1,575	Ball. Warrior. Smith.
3	38 45 01.47	76 18 27.00	S 49 13 E N 51 47 E N 8 34 W	N 49 13 W S 51 47 W S 8 34 E	1,325 396 1,744	Ball. Warrior. Smith.
4	38 44 51.00	76 18 00.90	N 59 44 W S 79 17 W S 31 15 W	S 59 45 E N 79 16 E N 31 15 E	1,446 1,224 2,360	Hawk. Dunk. Eagle.
5	38 44 47.38	76 18 25.46	S 67 55 E N 20 34 E N 35 13 W	N 67 55 W S 20 34 W S 35 13 E	1,039 769 1,041	Ball. Warrior. Hawk.

LODGES.

(Harris Creek—Chart No. 33.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 45 01.47	76 18 27.00	S 49 13 E N 51 47 E N 8 34 W	N 49 13 W S 51 47 W S 8 34 E	1,325 396 1,744	Ball. Warrior. Smith.
2	38 45 06.30	76 18 44.22	S 54 48 E N 83 55 E N 7 06 E	N 54 48 W S 83 55 W S 7 06 W	1,785 770 1,575	Ball. Warrior. Smith.
3	38 45 39.46	76 18 54.80	S 45 13 E S 82 54 E N 67 38 E	N 45 13 W N 82 54 W S 67 39 W	1,472 1,531 2,054	Warrior. Edmond. Dan.
4	38 45 20.25	76 18 10.74	N 32 12 W S 75 22 W S 37 49 W	S 32 12 E N 75 22 E N 37 49 E	1,292 1,020 1,537	Smith. Hawk. Dunk.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WALNUT.

(Harris Creek—Chart No. 33.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 45 20.25	76 18 10.74	N 32 12 W S 75 22 W S 37 49 W	S 32 12 E N 75 22 E N 37 49 E	1,292 1,020 1,537	Smith. Hawk. Dunk.
2	38 45 39.46	76 18 54.80	S 45 13 E S 82 54 E N 67 38 E	N 45 13 W N 82 54 W S 67 39 W	1,472 1,531 2,054	Warrior. Edmond. Dan.
3	38 45 52.64	76 18 36.85	S 12 31 W S 58 47 E N 76 41 E	N 12 31 E N 58 47 W S 76 41 W	1,382 1,223 1,465	Hawk. Edmond. Dan.
4	38 45 53.40	76 17 53.60	N 11 49 E S 88 43 W S 20 46 W	S 11 49 W N 88 42 E N 20 46 E	775 1,142 1,612	Vine. Smith. Warrior.

SMITH POINT.

(Harris Creek—Chart No. 33.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 45 52.64	76 18 36.85	S 12 31 W S 58 47 E N 76 41 E	N 12 31 E N 58 47 W S 76 41 W	1,382 1,223 1,465	Hawk. Edmond. Dan.
2	38 46 14.47	76 18 17.00	S 21 33 W N 20 50 E S 66 10 E	N 21 33 E S 20 50 W N 66 09 W	2,243 1,465 986	Hawk. Edmond. Dan.
3	38 46 00.00	76 17 59.00	S 2 59 E N 78 11 E N 34 33 E	N 2 59 W S 78 11 W S 34 33 W	884 436 1,215	Edmond. Dan. Cummings.
4	38 45 53.40	76 17 53.60	N 11 49 E S 88 43 W S 20 46 W	S 11 49 W N 88 42 E N 20 46 E	775 1,142 1,612	Vine. Smith. Warrior.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

LITTLE NECK.

(Harris Creek—Charts Nos. 33 and 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 45 53.40	76 17 53.60	N 11 49 E	S 11 49 W	775	Vine.
			S 88 43 W	N 88 42 E	1, 142	Smith.
			S 20 46 W	N 20 46 E	1, 612	Warrior.
2	38 46 00.00	76 17 50.00	S 2 59 E	N 2 59 W	884	Edmond.
			N 78 11 E	S 78 11 W	436	Dan.
			N 34 33 E	S 34 33 W	1, 215	Cummings.
3	38 46 15.00	76 17 47.50	S 58 54 W	N 58 54 E	1, 519	Smith.
			S 15 43 E	N 15 43 W	464	Dan.
			S 84 29 E	N 84 28 W	899	Fox.
4	38 46 13.74	76 17 35.30	N 6 45 E	S 6 45 W	541	Cummings.
			N 77 21 W	S 77 21 E	332	Vine.
			S 28 00 W	N 28 00 E	423	Dan.

RABBIT ISLAND.

(Harris Creek—Chart No. 34.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 46 13.74	76 17 35.30	N 6 45 E	S 6 45 W	541	Cummings.
			N 77 21 W	S 77 21 E	332	Vine.
			S 28 00 W	N 28 00 E	423	Dan.
2	38 46 25.28	76 17 24.06	S 31 44 W	N 31 43 E	898	Dan.
			S 36 26 E	N 36 26 W	501	Fox.
			S 74 08 E	N 74 07 W	843	Koot.
3	38 46 23.38	76 17 00.15	S 46 32 W	N 46 31 E	492	Fox.
			S 43 10 E	N 43 10 W	229	Koot.
			N 85 12 E	S 85 12 W	886	Bozman.
4	38 46 16.70	76 17 00.10	N 31 01 E	S 31 01 W	510	Grace.
			N 34 32 W	S 34 32 E	447	Rabbit.
			S 88 46 W	N 88 46 E	1, 254	Vine.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

DAWSON.

(Outer Choptank River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 39 58.32	76 15 41.88	N 41 38 E N 11 48 W N 63 59 W	S 41 39 W S 11 48 E S 64 01 E	4,344 4,356 6,387	Roys. Nelson 3. Bar.
2	38 40 14.76	76 17 01.00	N 17 56 E N 58 21 W S 87 03 W	S 17 56 W S 58 23 E N 87 01 E	3,899 4,286 5,394	Nelson 3. Bar. Black.
3	38 40 57.06	76 17 00.88	N 27 40 E N 77 19 W S 72 27 W	S 27 41 W S 77 20 E N 72 25 E	2,578 3,743 5,653	Nelson 3. Bar. Black.
4	38 40 57.08	76 16 09.60	N 70 50 E N 03 58 W N 80 41 W	S 70 52 W S 03 58 E S 80 43 E	3,831 2,289 5,073	Roys. Nelson 3. Bar.

FRANCE.

(Outer Choptank River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 40 57.06	76 17 00.88	N 27 40 E N 77 19 W S 72 27 W	S 27 41 W S 77 20 E N 72 25 E	2,578 3,743 5,653	Nelson 3. Bar. Black.
2	38 41 54.74	76 17 00.72	N 74 10 E N 31 48 W S 72 55 W	S 74 11 W S 31 48 E N 72 54 E	1,240 2,677 3,824	Nelson 3. Change 1910. Bar.
3	38 41 55.12	76 16 10.76	S 79 09 E N 21 22 W S 77 08 W	N 79 08 W S 21 23 E N 77 06 E	3,716 349 5,104	Roys. Nelson 3. Bar.
4	38 40 57.08	76 16 09.60	N 70 50 E N 03 58 W N 80 41 W	S 70 52 W S 03 58 E S 80 43 E	3,831 2,289 5,073	Roys. Nelson 3. Bar.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GREAT MARSH.

(Outer Choptank River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 41 54.74	76 17 00.72	N 74 10 E N 31 48 W S 72 55 W	S 74 11 W S 31 48 E N 72 54 E	1,240 2,677 3,824	Nelson 3. Change 1910. Bar.
2	38 42 07.41	76 17 16.12	S 86 49 E N 28 30 W S 64 30 W	N 86 48 W S 28 31 E N 64 28 E	1,602 2,103 3,599	Nelson 3. Change 1910. Bar.
3	38 42 44.00	76 17 04.80	N 65 52 W S 51 35 W S 43 52 E	S 65 52 E N 51 33 E N 43 51 W	1,427 4,529 1,877	Change 1910. Bar. Nelson 3.
4	38 42 27.90	76 16 37.15	N 60 22 W S 62 21 W S 36 10 E	S 60 23 E N 62 19 E N 36 09 W	2,339 4,830 967	Change 1910. Bar. Nelson 3.
5	38 41 55.12	76 16 10.76	S 79 09 E N 21 22 W S 77 08 W	N 79 08 W S 21 23 E N 77 06 E	3,716 349 5,104	Roys. Nelson 3. Bar.

LONG POINT WOODS.

(Broad Creek—Chart No. 34.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 41 44.94	76 15 29.76	S 82 06 E N 41 17 E N 61 05 W	N 82 05 W S 41 17 W S 61 06 E	2,591 2,732 1,383	Roys. Peary. Nelson 3.
2	38 42 29.78	76 16 05.00	S 61 53 E N 78 48 E N 16 07 W	N 61 52 W S 78 49 W S 16 07 E	3,965 2,786 1,130	Roys. Peary. Annette.
3	38 42 57.80	76 16 04.68	S 9 09 W N 81 55 E N 2 20 W	N 9 09 E S 81 56 W S 2 20 E	1,811 2,633 1,140	Nelson 3. Cook. Myrtle.
4	38 42 38.10	76 15 41.50	N 62 35 E N 49 15 W S 38 42 W	S 62 35 W S 49 16 E N 38 42 E	2,247 1,234 1,440	Cook. Annette. Nelson 3.
5	38 41 54.64	76 15 07.08	S 70 51 E N 34 52 E N 79 19 W	N 70 50 W S 34 53 W S 79 20 E	2,082 2,104 1,843	Roys. Peary. Nelson 3.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GREAT BAR.

(Broad Creek—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 42 16.56	76 14 46.24	S 44 53 E N 33 28 E N 57 24 W	N 44 52 W S 33 28 W S 57 25 E	2,007 1,183 2,842	Roys. Peary. Annette.
2	38 42 38.10	76 15 41.50	N 62 35 E N 49 15 W S 38 42 W	S 62 35 W S 49 16 E N 38 42 E	2,247 1,234 1,440	Cook. Annette. Nelson 3.
3	38 43 23.66	76 14 58.42	N 27 22 W N 81 35 W S 70 34 W	S 27 23 E S 81 36 E N 70 33 E	1,547 1,816 2,198	Coal. Myrtle. Annette.
4	38 43 26.45	76 14 27.40	N 50 06 W N 86 15 W S 46 04 W	S 50 06 E S 86 16 E N 46 03 E	1,996 2,621 3,970	Coal. Myrtle. Nelson 3.
5	38 42 40.56	76 14 45.00	S 31 48 E N 74 00 E N 27 48 E	N 31 47 W S 74 00 W S 27 48 W	2,625 645 1,076	Roys. Peary. Cook.
6	38 42 25.02	76 14 37.76	S 54 40 E N 31 24 E N 64 33 W	N 54 39 W S 31 24 W S 64 34 E	1,908 822 2,900	Irish. Peary. Annette.

BROWN.

(Broad Creek—Chart No. 34.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 43 06.34	76 15 50.75	N 25 59 W S 77 59 W S 17 32 W	S 25 59 E N 77 58 E N 17 32 E	945 705 2,177	Myrtle. Annette. Nelson 3.
2	38 43 21.80	76 16 15.06	S 46 06 E S 81 21 E N 61 28 E	N 46 04 W N 81 20 W S 61 30 W	5,223 2,914 3,449	Roys. Cook. Ross.
3	38 43 57.80	76 15 12.66	S 36 43 E N 72 35 E N 23 04 E	N 36 43 W S 72 36 W S 23 04 W	2,061 1,448 2,122	Cook. Ross. Bald.
4	38 43 37.40	76 15 17.94	N 12 08 W S 81 15 W S 52 31 W	S 12 08 E N 81 14 E N 52 30 E	932 1,296 1,962	Coal. Myrtle. Annette.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

DEEP NECK.

(Broad Creek—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 43 23.66	76 14 58.42	N 27 22 W N 81 35 W S 70 34 W	S 27 23 E S 81 36 E N 70 33 E	1,547 1,816 2,198	Coal. Myrtle. Annette.
2	38 43 37.40	76 15 17.94	N 12 08 W N 81 15 W S 52 31 W	S 12 08 E N 81 14 E N 52 30 E	932 1,296 1,962	Coal. Myrtle. Annette.
3	38 43 57.80	76 15 12.66	S 36 43 E N 72 35 E N 23 04 E	N 36 43 W S 72 36 W S 23 04 W	2,061 1,448 2,122	Cook. Ross. Bald.
4	38 44 31.00	76 14 56.40	S 54 14 E N 25 46 E N 35 55 W	N 54 13 W S 25 46 W S 35 55 E	1,173 925 1,063	Ross. Bald. Skinner.
5	38 44 40.66	76 14 31.02	N 62 05 E N 27 54 W S 78 55 W	S 62 06 W S 27 54 E N 78 54 E	1,190 573 1,540	Willey. Bald. Tobe.
6	38 44 11.72	76 14 28.66	N 32 51 E N 12 34 W N 66 38 W	S 32 51 W S 12 34 E S 66 39 E	1,825 1,519 1,715	Willey. Bald. Tobe.
7	38 43 26.45	76 14 27.40	N 50 06 W N 86 15 W S 46 04 W	S 50 06 E S 86 16 E N 46 03 E	1,996 2,621 3,970	Coal. Myrtle. Nelson 3.

MULBERRY POINT.

(Broad Creek—Chart No. 34.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 44 31.00	76 14 56.40	S 54 14 E N 25 46 E N 35 55 W	N 54 13 W S 25 46 W S 35 55 E	1,173 925 1,063	Ross. Bald. Skinner.
2	38 44 45.90	76 15 25.00	S 76 30 W S 10 16 W S 55 10 E	N 76 30 E N 10 16 E N 55 09 W	911 480 2,081	Fairbanks. Tobe. Ross.
3	38 44 54.54	76 15 23.72	S 61 16 W S 8 53 W S 48 30 E	N 61 16 E N 8 53 E N 48 30 W	1,048 773 2,235	Fairbanks. Tobe. Ross.
4	38 44 47.98	76 14 38.43	S 67 34 W S 20 47 E S 57 13 E	N 67 34 E N 20 47 W N 57 12 W	1,424 1,346 1,591	Tobe. Ross. Cedar.
5	38 44 40.66	76 14 31.02	N 62 05 E N 27 54 W S 78 55 W	S 62 06 W S 27 54 E N 78 54 E	1,190 573 1,540	Willey. Bald. Tobe.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BROAD CREEK MIDDLEGROUND.

(Broad Creek—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 44 11.72	76 14 28.66	N 32 51 E N 12 34 W N 66 38 W	S 32 51 W S 12 34 E S 66 39 E	1,825 1,519 1,715	Willey. Bald. Tobe.
2	38 44 40.66	76 14 31.02	N 62 05 E N 27 54 W S 78 55 W	S 62 06 W S 27 54 E N 78 54 E	1,190 573 1,540	Willey. Bald. Tobe.
3	38 44 46.36	76 13 55.44	S 28 39 W S 14 05 E S 74 22 E	N 28 38 E N 14 05 W N 74 21 W	1,372 832 1,822	Ross. Cedar. Spencer.
4	38 44 22.42	76 13 47.77	N 4 24 W N 51 30 W S 65 14 W	S 4 23 E S 51 30 E N 65 14 E	1,177 1,802 947	Willey. Bald. Ross.

WELL POINT.

(Broad Creek—Chart No. 34.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 44 31.88	76 15 28.24	S 68 15 E N 14 39 E N 26 21 W	N 68 14 W S 14 39 W S 26 21 E	1,931 860 734	Ross. Skinner. Pine.
2	38 44 43.80	76 15 36.14	S 12 05 W S 27 26 E N 44 47 E	N 12 05 E N 27 26 W S 44 47 W	571 453 605	Wire. Tobe. Skinner.
3	38 44 47.90	76 15 38.16	S 5 25 W S 25 52 E N 58 44 E	N 5 25 E N 25 51 W S 58 44 W	699 600 560	Wire. Tobe. Skinner.
4	38 45 02.62	76 15 35.10	S 9 55 E S 62 44 E N 38 00 E	N 9 55 W N 62 44 W S 38 00 W	1,052 448 713	Tobe. Skinner. Cabin.
5	38 44 35.80	76 15 24.82	N 59 48 E N 10 18 E N 38 22 W	S 59 49 W S 10 18 W S 38 22 E	1,334 711 670	Bald. Skinner. Pine.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

POMPES.

(Broad Creek—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 44 37.46	76 15 57.38	S 37 56 W S 52 05 E S 76 16 E	N 37 56 E N 52 05 W N 76 15 W	518 560 793	Blanco. Wire. Tobe.
2	38 44 44.24	76 15 53.42	S 33 35 W S 30 29 E S 57 55 E	N 33 34 E N 30 29 W N 57 55 W	764 665 785	Blanco. Wire. Tobe.
3	38 44 47.90	76 15 38.16	S 5 25 W S 25 52 E N 58 44 E	N 5 25 E N 25 51 W S 58 44 W	609 600 560	Wire. Tobe. Skinner.
4	38 44 43.80	76 15 36.14	S 12 05 W S 27 26 E N 44 47 E	N 12 05 E N 27 26 W S 44 47 W	571 453 605	Wire. Tobe. Skinner.

COOPERS POINT.

(Broad Creek—Chart No. 34.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 44 24.64	76 16 06.39	N 82 36 E N 22 24 E N 49 46 W	S 82 36 W S 22 24 W S 49 46 E	686 546 673	Wire. Fairbanks. Caulk.
2	38 44 36.58	76 16 24.00	S 59 27 W S 45 28 E N 81 24 E	N 59 27 E N 45 27 W S 81 24 W	552 540 681	Ned. Blanco. Fairbanks.
3	38 44 42.40	76 16 12.09	S 58 53 W S 6 58 E S 58 24 E	N 58 53 E N 6 58 W N 58 24 W	923 580 974	Ned. Blanco. Wire.
4	38 44 39.60	76 16 04.04	S 69 07 W S 16 30 W S 56 01 E	N 69 07 E N 16 30 E N 56 01 W	1,073 501 745	Ned. Blanco. Wire.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

JUDYS POINT.

(Broad Creek—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 44 28.26	76 16 38.26	S 82 39 E S 88 44 E N 46 23 E	N 82 39 W N 88 43 W S 46 23 W	768 1,521 453	Blanco. Wire. Caulk.
2	38 44 29.01	76 16 48.78	S 81 58 E S 83 14 E N 64 38 E	N 81 58 W N 83 13 W S 64 38 W	185 1,047 670	Ned. Blanco. Caulk.
3	38 44 37.06	76 16 46.79	S 23 05 E S 68 11 E N 88 22 E	N 23 05 W N 68 11 W S 88 22 W	323 1,063 553	Ned. Blanco. Caulk.
4	38 44 35.92	76 16 36.46	S 29 32 W S 63 28 E N 79 03 E	N 29 32 E N 63 28 W S 79 03 W	297 708 285	Ned. Blanco. Caulk.

BRUSHY POINT.

(Broad Creek—Chart No. 34.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 45 02.62	76 15 35.10	S 9 55 E S 62 44 E N 38 00 E	N 9 55 W N 62 44 W S 38 00 W	1,052 448 713	Tobe. Skinner. Cabin.
2	38 45 03.90	76 15 42.63	S 19 23 E S 67 25 E N 50 53 E	N 19 23 W N 67 24 W S 50 53 W	1,145 647 822	Tobe. Skinner. Cabin.
3	38 45 12.80	76 15 36.64	S 9 08 E S 38 41 E N 65 32 E	N 9 08 W N 38 40 W S 65 32 W	1,398 702 527	Tobe. Skinner. Cabin.
4	38 45 14.68	76 15 28.24	S 22 32 W S 19 33 E N 58 57 E	N 22 32 E N 19 33 W S 58 58 W	851 650 301	Pine. Skinner. Cabin.

WILLEYS ISLAND FLATS.

(Broad Creek—Chart No. 34.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 44 46.36	76 13 55.44	S 28 39 W S 14 05 E S 74 22 E	N 28 38 E N 14 05 W N 74 21 W	1,372 832 1,822	Ross. Cedar Spencer.
2	38 45 04.60	76 14 27.20	S 75 17 E N 57 53 E N 17 20 E	N 75 17 W S 57 53 W S 17 20 W	983 1,005 1,445	Wiley. Ray. Grave.
3	38 45 18.92	76 14 25.74	S 51 14 E N 88 38 E N 23 37 E	N 51 14 W S 88 39 W S 23 37 W	1,170 814 978	Wiley. Ray. Grave.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WILLEYS ISLAND FLATS—Continued.

(Broad Creek—Chart No. 34)—Continued.

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
4	38 45 19.58	76 14 38.14	S 58 40 E	N 58 39 W	1,452	Willey.
			N 88 32 E	S 88 32 W	1,141	Ray.
			N 39 27 E	S 39 27 W	1,132	Grave.
5	38 45 34.03	76 14 32.14	S 5 29 E	N 5 29 W	798	Rose.
			S 64 59 E	N 64 59 W	1,084	Ray.
			N 55 26 E	S 55 26 W	681	Grave.
6	38 45 40.86	76 14 39.10	N 78 08 E	S 78 08 W	761	Grave.
			N 30 24 E	S 30 24 W	589	Royal.
			N 33 48 W	S 33 48 E	1,001	Mars.
7	38 45 54.63	76 14 37.10	N 58 55 W	S 58 55 E	712	Mars.
			S 65 37 W	N 65 37 E	524	Bengal.
			S 10 41 E	N 10 41 W	706	Gram.
8	38 45 45.50	76 14 10.90	N 51 44 W	S 51 44 E	569	Royal.
			S 55 26 W	N 55 26 E	681	Gram.
			S 26 29 E	N 26 29 W	944	Ray.
9	38 45 14.38	76 13 58.24	N 53 29 W	S 53 30 E	1,113	Gram.
			S 80 51 W	N 80 51 E	827	Rose.
			S 15 10 W	N 15 09 E	2,227	Ross.

HOLLAND POINT.

(Broad Creek—Chart No. 34.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 45 49.42	76 14 52.34	N 71 15 E	S 71 16 W	684	Royal.
			N 20 53 W	S 20 53 E	582	Mars.
			N 51 23 W	S 51 24 E	1,115	Woodill.
2	38 45 54.52	76 15 12.46	N 87 40 E	S 87 41 W	1,180	Royal.
			N 41 06 E	S 41 06 W	492	Mars.
			N 33 01 W	S 33 02 E	626	Woodill.
3	38 46 10.07	76 15 25.37	S 23 46 E	N 23 46 W	575	Eastman.
			S 77 03 E	N 77 03 W	682	Mars.
			N 22 52 E	S 22 53 W	616	Venus.
4	38 46 24.96	76 15 24.56	S 44 29 E	N 44 29 W	919	Mars.
			N 73 27 E	S 73 27 W	227	Venus.
			N 2 06 W	S 2 06 E	949	Willis.
5	38 46 28.39	76 15 33.69	S 19 35 E	N 19 35 W	656	Woodill.
			S 83 42 E	N 83 41 W	461	Venus.
			N 66 00 E	S 66 00 W	428	Neptune.
6	38 46 32.30	76 15 24.60	N 44 40 W	S 44 40 E	605	Marion.
			S 61 13 W	N 61 13 E	273	Delta.
			S 1 33 W	N 1 33 E	750	Woodill.
7	38 46 05.53	76 15 00.19	S 49 14 W	N 49 14 E	572	Eastman.
			S 12 43 E	N 12 43 W	599	Bengal.
			S 69 17 E	N 69 16 W	914	Royal.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HARRISON.

(Broad Creek—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 46 41.52	76 15 34.40	S 2 25 E S 56 39 E N 29 58 E	N 2 25 W N 56 39 W S 29 58 W	443 489 451	Delta. Neptune. Willis.
2	38 46 47.08	76 15 30.33	S 75 58 W S 33 26 E N 30 06 E	N 75 57 E N 33 26 W S 30 06 W	282 548 234	Marion. Neptune. Willis.
3	38 46 41.62	76 15 25.40	N 74 01 W S 26 08 W S 32 10 E	S 74 01 E N 26 08 E N 32 10 W	420 496 322	Marion. Delta. Neptune.

CEDAR POINT.

(Broad Creek—Chart No. 34.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 44 15.78	76 13 22.37	S 69 00 E N 58 29 E N 01 46 W	N 69 00 W S 58 29 W S 01 46 E	1,417 1,035 1,524	Marsh. Spencer. Hopkins.
2	38 44 22.42	76 13 47.77	N 4 24 W N 51 30 W S 65 14 W	S 4 23 E S 51 30 E N 65 14 E	1,177 1,802 947	Wiley. Bald. Ross.
3	38 44 46.36	76 13 55.44	S 28 39 W S 14 05 E S 74 22 E	N 28 38 E N 14 05 W N 74 21 W	1,372 852 1,822	Ross. Cedar. Spencer.
4	38 44 19.25	76 12 54.44	S 43 09 E N 18 44 E N 29 09 W	N 43 08 W S 18 44 W S 29 10 E	856 447 1,611	Marsh. Spencer. Hopkins.

DRUM POINT.

(Broad Creek—Chart No. 34.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 44 19.25	76 12 54.44	S 43 09 E N 18 44 E N 29 09 W	N 43 08 W S 18 44 W S 29 10 E	856 447 1,611	Marsh. Spencer. Hopkins.
2	38 44 46.36	76 13 55.44	S 28 39 W S 14 05 E S 74 22 E	N 28 38 E N 14 05 W N 74 21 W	1,372 832 1,822	Ross. Cedar. Spencer.
3	38 44 53.66	76 13 09.80	N 83 47 W S 43 35 W S 29 03 E	S 83 47 E N 43 35 E N 29 02 W	1,099 1,454 2,042	Wiley. Cedar. Marsh.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 44 31.81	76 12 49.00	N 43 22 W S 78 28 W S 22 51 E	S 43 22 E N 78 28 E N 22 51 W	1,352 1,585 1,137	Hopkins. Cedar. Marsh.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

JOE HARRIS FLATS.

(Broad Creek—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 43 50.78	76 12 49.30	N 53 18 E N 0 20 E N 21 15 W	S 53 19 W S 0 20 W S 21 15 E	561 1,386 2,539	Marsh. Spencer. Hopkins.
2	38 44 00.20	76 13 02.34	N 88 44 E N 18 17 E N 15 42 W	S 88 44 W S 18 18 W S 15 42 E	795 1,123 2,128	Marsh. Spencer. Hopkins.
3	38 44 19.25	76 12 54.44	S 43 09 E N 18 44 E N 29 09 W	N 43 08 W S 18 44 W S 29 10 E	856 447 1,611	Marsh. Spencer. Hopkins.
4	38 44 00.72	76 12 32.27	N 66 24 E N 24 13 E S 22 51 E	S 66 24 W S 24 13 W N 22 51 W	932 749 1,137	Clark. Marshall. Spencer.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						

PIN CUSHION.

(Broad Creek—Chart No. 34.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 43 58.18	76 12 14.41	N 39 45 E N 12 04 W N 38 51 W	S 39 45 W S 12 05 E S 38 52 E	596 786 1,457	Clark. Marshall. Spencer.
2	38 44 17.84	76 12 30.00	N 46 48 W S 5 56 W S 29 12 E	S 46 49 E N 5 56 E N 29 12 W	688 580 974	Spencer. Marsh. Holly.
3	38 44 20.18	76 12 28.20	N 54 29 W S 9 18 W S 24 43 E	S 54 29 E N 9 18 E N 24 43 W	675 665 1,024	Spencer. Marsh. Holly.
4	38 44 08.74	76 12 04.52	N 56 29 W S 69 45 W S 19 58 W	S 56 30 E N 69 45 E N 19 58 E	1,409 781 579	Spencer. Marsh. Holly.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WILLEYS ISLAND.

(Broad Creek—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° /	° /	Yards.	
1	38 44 56.38	76 13 44.48	S 60 31 E N 73 57 E N 2 54 E	N 60 30 W S 73 57 W S 2 54 W	1,684 559 864	Spencer. Hopkins. Judge.
2	38 45 11.68	76 13 45.60	S 57 27 E N 61 30 E N 1 35 E	N 57 27 W S 61 30 W S 1 35 W	671 534 1,129	Hopkins. Taft. Harper.
3	38 45 21.40	76 13 37.45	S 27 00 E S 73 55 E N 12 57 W	N 27 00 W N 73 55 W S 12 57 E	773 264 821	Hopkins. Taft. Harper.
4	38 45 26.42	76 13 46.56	S 34 35 E S 63 52 E N 5 07 E	N 34 34 W N 63 52 W S 5 07 W	1,043 550 634	Hopkins. Taft. Harper.
5	38 45 36.14	76 13 34.96	N 69 17 W S 23 29 W S 18 15 E	S 69 18 E N 23 29 E N 18 15 W	621 521 600	Thelma. Judge. Taft.
6	38 45 33.40	76 13 29.96	N 66 22 W S 41 19 W S 6 41 E	S 66 22 E N 41 19 E N 6 41 W	778. 514 481	Thelma. Judge. Taft.
7	38 44 56.96	76 13 33.60	N 16 06 W N 89 03 W S 17 49 W	S 16 06 E S 89 03 E N 17 49 E	878 464 1,224	Judge. Willey. Cedar.

FOX.

(Broad Creek—Chart No. 34.)

	° / "	° / "	° /	° /	Yards.	
1	38 45 57.50	76 13 42.78	S 5 56 W N 66 25 E N 14 13 E	N 5 56 E S 66 25 W S 14 13 W	419 226 553	Harper. Ansley. Beverly.
2	38 46 04.16	76 13 42.68	S 4 06 W S 56 52 E N 48 23 E	N 4 06 E N 56 52 W S 48 23 W	643 245 504	Harper. Ansley. Samuel.
3	38 46 08.04	76 13 36.80	S 46 30 W S 10 40 E N 47 23 E	N 46 30 E N 10 40 W S 47 23 W	381 269 302	Elmore. Ansley. Samuel.
4	38 46 05.96	76 13 31.08	N 14 28 E N 34 30 W S 65 49 W	S 14 28 W S 34 30 E N 65 49 E	283 305 468	Samuel. Beverly. Elmore.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ROYSTON.

(Outer Choptank River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 40 08.08	76 14 26.04	N 87 14 E N 16 51 E N 36 21 W	S 87 15 W S 16 52 W S 36 22 E	3,832 3,041 4,884	Benoni 2. Roys. Nelson 3.
2	38 41 12.32	76 15 33.00	N 74 19 E N 32 28 W N 87 04 W	S 74 20 W S 32 28 E S 87 06 E	2,754 2,096 5,982	Roys. Nelson 3. Bar.
3	38 42 06.98	76 14 28.92	S 69 29 E N 8 27 E S 88 29 W	N 69 28 W S 8 27 W N 88 28 E	1,413 1,324 2,819	Irish. Peary. Nelson 3.
4	38 42 05.74	76 14 09.20	S 89 26 W S 22 28 E S 60 30 E	N 89 24 E N 22 27 W N 60 30 W	3,340 1,144 921	Nelson 3. Roys. Irish.
5	38 41 48.26	76 13 52.96	N 81 36 W S 00 56 E N 69 53 E	S 81 38 E N 00 56 W S 69 54 W	3,810 467 397	Nelson 3. Roys. Irish.
6	38 41 39.16	76 13 56.66	N 46 41 E N 16 18 W N 76 46 W	S 46 41 W S 16 19 E S 76 48 E	646 2,342 3,771	Irish. Peary. Nelson 3.
7	38 40 44.14	76 13 52.40	S 70 41 E N 00 14 W N 54 18 W	N 70 39 W S 00 14 E S 54 20 E	3,113 1,694 4,659	Benoni 2. Roys. Nelson 3.

IRISH CREEK.

(Outer Choptank River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 39 44.96	76 13 11.10	S 76 23 E N 62 23 E N 16 35 W	N 76 23 W S 62 23 W S 16 35 E	3,412 2,083 3,851	Choptank River Light. Benoni 2. Roys.
2	38 40 26.10	76 13 50.38	S 81 41 E N 1 30 W N 49 05 W	N 81 40 W S 1 30 E S 49 06 E	2,916 2,304 5,079	Benoni 2. Roys. Nelson 3.
3	38 40 44.14	76 13 52.40	S 70 41 E N 00 14 W N 54 18 W	N 70 39 W S 00 14 E S 54 20 E	3,113 1,694 4,659	Benoni 2. Roys. Nelson 3.
4	38 41 16.80	76 13 21.94	N 11 24 E N 53 51 W N 70 36 W	S 11 24 W S 53 51 E S 70 37 E	1,142 1,006 4,865	Creek. Roys. Nelson 3.
5	38 41 52.04	76 13 16.44	N 24 04 E N 89 09 W S 58 09 W	S 24 05 W S 89 09 E N 58 09 E	772 593 1,128	Ila. Irish. Roys.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

IRISH CREEK—Continued.

(Outer Choptank River—Chart No. 34)—Continued.

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
6	38 41 19.58	76 13 04.64	N 12 43 W	S 12 43 E	1,051	Creek.
			N 21 18 W	S 21 18 E	2,003	Pont.
			N 68 31 W	S 68 31 E	1,365	Roys.
7	38 41 00.00	76 13 03.46	N 8 51 W	S 8 52 E	1,706	Creek.
			N 16 43 W	S 16 43 E	2,638	Pont.
			N 48 16 W	S 48 17 E	1,743	Roys.
8	38 40 41.02	76 12 44.32	S 50 55 E	N 50 54 W	1,467	Benoni 2.
			N 18 17 W	S 18 17 E	2,450	Creek.
			N 45 06 W	S 45 07 E	2,550	Roys.
9	38 40 18.30	76 12 52.02	S 55 48 E	N 55 47 W	3,403	Choptank River Light.
			S 83 16 E	N 83 15 W	1,352	Benoni 2.
			N 31 59 W	S 32 00 E	3,026	Roys.

CHOPTANK LUMPS.

(Outer Choptank River—Charts Nos. 34 and 37.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 39 08.00	76 13 46.22	N 83 52 E N 51 26 E N 1 59 W	S 83 54 W S 51 27 W S 1 59 E	4,273 3,549 4,940	Choptank River Light. Benoni 2. Roys.
Thence along county boundary as delineated on Charts Nos. 34 and 37 to corner No. 2.						
2	38 39 58.32	76 15 41.88	N 41 38 E N 11 48 W N 63 59 W	S 41 39 W S 11 48 E S 64 01 E	4,344 4,356 6,387	Roys. Nelson 3. Bar.
3	38 39 43.30	76 13 45.60	S 80 10 E N 69 41 E N 2 51 W	N 80 08 W S 69 42 W S 2 51 E	4,295 2,941 3,751	Choptank River Light. Benoni 2. Roys.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BENONI.

(Outer Choptank River—Charts Nos. 34 and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 38 48.40	76 11 45.22	S 49 58 E N 43 09 E N 8 24 W	N 49 57 W S 43 10 W S 8 24 E	3,479 1,533 2,005	Castle. Choptank River Light. Benoni 2.
	Thence along county boundary as delineated on chart No. 37					to corner No. 2.
2	38 39 05.04	76 13 38.98	S 68 56 W S 16 26 W N 82 11 E	N 68 54 E N 16 25 E S 82 13 W	6,512 2,764 4,094	Chief. Dot. Choptank River Light.
3	38 39 44.96	76 13 11.10	S 76 23 E N 62 23 E N 16 35 W	N 76 23 W S 62 23 W S 16 35 E	3,412 2,083 3,851	Choptank River Light. Benoni 2. Roys.
4	38 40 18.30	76 12 52.02	S 55 48 E S 83 16 E N 31 59 W	N 55 47 W N 83 15 W S 32 00 E	3,403 1,352 3,026	Choptank River Light. Benoni 2. Roys.
5	38 39 45.15	76 12 00.66	S 61 23 E N 17 40 E N 00 57 W	N 61 22 W S 17 40 W S 00 57 E	1,660 3,275 959	Choptank River Light. Mutton. Benoni 2.

LIGHTHOUSE.

(Outer Choptank River—Charts Nos. 34, 35, and 37.)

	o / //	o / //	o /	o /	Yards.	
1	38 38 48.40	76 11 45.22	S 49 58 E N 43 09 E N 8 24 W	N 49 57 W S 43 10 W N 8 24 E	3,479 1,533 2,905	Castle. Choptank River Light. Benoni 2.
2	38 39 45.15	76 12 00.66	S 61 23 E N 17 40 E N 0 57 W	N 61 22 W S 17 40 W S 0 57 E	1,660 3,275 959	Choptank River Light. Mutton. Benoni 2.
3	38 39 42.88	76 10 50.00	S 80 11 E N 36 36 E N 61 12 W	N 80 11 W S 36 36 W S 61 12 E	2,403 1,261 2,150	Landeye. Boone. Benoni 2.
4	38 39 16.14	76 10 19.78	S 47 34 E N 72 34 E N 1 24 W	N 47 33 W S 72 35 W S 1 24 E	3,957 1,645 1,915	Chlora. Landeye. Boone.
5	38 38 48.64	76 11 18.98	S 73 27 E N 17 43 E N 21 19 W	N 73 25 W S 17 43 W S 21 19 E	3,986 1 166 3,075	Chlora. Choptank River Light. Benoni 2.

Thence along county boundary as delineated on chart No. 37 to corner No. 1.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BACK SHORE.

(Outer Choptank River—Charts Nos. 34, 35, and 37.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 37 52.86	76 09 25.36	N 47 35 E N 2 15 E S 64 59 W	S 47 36 W S 2 15 W N 64 58 E	1,106 3,304 1,538	Chlora. Landeye. Large Water Tank.
Thence along county boundary as delineated on charts Nos. 34 and 35 to corner No. 2.						
2	38 38 27.80	76 10 07.48	S 2 53 E S 77 23 E N 30 22 E	N 2 53 W N 77 22 W S 30 22 W	1,544 1,978 2,461	Castle. Chlora. Landeye.
3	38 39 16.14	76 10 19.78	S 47 34 E N 72 34 E N 1 24 W	N 47 33 W S 72 35 W S 1 24 E	3,057 1,645 1,915	Chlora. Landeye. Boone.
4	38 39 42.88	76 10 50.00	S 80 11 E N 36 36 E N 61 12 W	N 80 11 W S 36 36 W S 61 12 E	2,403 1,261 2,150	Landeye. Boone. Benoni 2.
5	38 40 04.36	76 10 09.62	N 47 36 W N 83 59 W S 45 43 W	S 47 36 E S 84 00 E N 45 42 E	428 2,968 2,067	Boone. Benoni 2. Choptank River Light.
Thence from corner No. 5 along the mean low-water line of the shore to corner No. 6, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
6	38 39 39.52	76 09 43.38	N 41 52 W S 74 26 W S 8 03 W	S 41 53 E N 74 25 E N 8 02 E	1,512 2,256 4,000	Boone. Choptank River Light. Castle.
7	38 39 25.86	76 09 21.68	N 34 54 W S 86 59 W S 17 57 W	S 34 54 E N 86 58 E N 17 56 E	744 2,750 3,680	Enter. Choptank River Light. Castle.
Thence from corner No. 7 along the mean low-water line of the shore to corner No. 8, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
8	38 38 14.98	76 08 54.49	N 57 03 W S 59 05 W S 10 18 E	S 57 04 E N 59 04 E N 10 18 W	4,131 2,160 3,944	Choptank River Light. Castle. Toot.

BACHELOR POINT.

(Entrance Tred Avon River—Charts Nos. 34 and 35.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 39 42.88	76 10 50.00	S 80 11 E N 36 36 E N 61 12 W	N 80 11 W S 36 36 W S 61 12 E	2,403 1,261 2,150	Landeye. Boone. Benoni 2.
2	38 40 31.52	76 11 46.04	S 74 18 E N 89 07 E N 21 18 E	N 74 17 W S 89 07 W S 21 19 W	2,321 1,799 1,672	Boone. Bach. Mutton.
3	38 40 41.52	76 10 47.16	N 37 52 W S 64 19 W S 10 14 W	S 37 53 E N 64 19 E N 10 14 E	1,545 2,174 2,739	Mutton. Benoni 2. Choptank River Light.
4	38 40 11.94	76 10 33.64	S 26 25 W N 84 09 E N 9 29 W	N 26 25 E S 84 09 W S 9 29 E	1,897 320 699	Choptank River Light. Boone. Bach.
5	38 40 04.36	76 10 09.62	N 47 36 W N 83 59 W S 45 43 W	S 47 36 E S 84 00 E N 45 42 E	428 2,968 2,067	Boone. Benoni 2. Choptank River Light.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

FOX HOLE.

(Tred Avon River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 40 31.52	76 11 46.04	S 74 18 E N 89 07 E N 21 18 E	N 74 17 W S 89 07 W S 21 19 W	2,321 1,799 1,672	Boone. Bach. Mutton.
2	38 40 34.55	76 11 49.50	S 25 16 E S 87 46 E N 25 39 E	N 25 16 W N 87 45 W S 25 40 W	2,721 1,892 1,614	Choptank River Light. Bach. Mutton.
3	38 41 34.84	76 11 00.60	S 43 53 E S 87 38 E N 13 43 E	N 43 52 W N 87 38 W S 13 43 W	1,375 646 1,208	First. Riverview. Bellevue.
4	38 41 30.20	76 10 39.72	N 11 16 W N 64 02 W S 69 48 W	S 11 16 E S 64 02 E N 69 47 E	1,357 793 1,220	Bellevue. Tred. Mutton.
5	38 41 05.50	76 10 54.52	N 15 15 W N 61 24 W S 45 14 W	S 15 15 E S 61 24 E N 45 13 E	1,224 860 2,485	Tred. Mutton. Bedoni 2.

STONE CHURCH.

(Tred Avon River—Charts Nos. 34 and 35.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 40 51.43	76 10 40.10	N 23 01 W N 52 02 W S 59 16 W	S 23 01 E S 52 03 E N 59 15 E	1,795 1,440 2,497	Tred. Mutton. Benoni 2.
2	38 41 30.20	76 10 39.72	N 11 16 W N 64 02 W S 69 48 W	S 11 16 E S 64 02 E N 69 47 E	1,357 793 1,220	Bellevue. Tred. Mutton.
3	38 41 14.64	76 10 30.56	N 15 17 W N 85 45 W S 7 51 W	S 15 17 E S 85 45 E N 7 51 E	1,924 1,391 1,439	Bellevue. Mutton. Bach.
4	38 40 52.62	76 10 27.52	N 32 40 W N 60 03 W S 62 01 W	S 32 41 E S 60 04 E N 62 00 E	1,918 1,694 2,806	Tred. Mutton. Benoni 2.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

TOWN POINT.

(Tred Avon River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
1	° ' " 38 41 30.20	° ' " 76 10 39.72	N 11 16 W S 64 02 W S 69 48 W	S 11 16 E S 64 02 E N 69 47 E	Yards. 1,357 793 1,220	Bellevue. Tred. Mutton.
2	° ' " 38 41 34.84	° ' " 76 11 00.60	S 43 53 E S 87 38 E N 13 43 E	N 43 52 E N 87 38 W S 13 43 W	1,375 646 1,208	First. Riverview. Bellevue.
3	° ' " 38 41 57.86	° ' " 76 10 56.40	S 24 56 W S 33 40 E N 23 50 E	N 24 56 E N 33 39 W S 23 50 W	646 965 435	Tred. Riverview. Bellevue.
4	° ' " 38 41 59.18	° ' " 76 10 41.36	N 27 16 E N 32 06 W S 46 45 W	S 27 16 W S 32 06 E N 46 45 E	1,437 417 920	Tar. Bellevue. Tred.
5	° ' " 38 41 40.68	° ' " 76 10 37.32	N 16 11 E N 18 35 W S 89 33 W	S 16 11 W S 18 35 E N 89 33 E	1,979 1,031 776	Tar. Bellevue. Tred.

STEWART ISLAND.

(Tred Avon River—Chart No. 34.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 41 39.80	76 10 14.42	N 1 35 W N 42 50 W N 89 01 W	S 1 34 E S 42 51 E S 89 02 E	1,931 1,374 1,382	Tar. Bellevue. Tred.
2	38 41 53.54	76 10 27.80	N 11 33 E N 46 51 W S 66 51 W	S 11 33 W S 46 52 E N 66 50 E	1,498 795 1,118	Tar. Bellevue. Tred.
3	38 42 11.24	76 10 15.34	N 1 56 W S 86 39 W S 52 38 W	S 1 56 E N 86 38 E N 52 37 E	872 911 1,708	Tar. Bellevue. Tred.
4	38 41 50.16	76 09 56.96	N 18 02 W N 64 46 W S 36 04 W	S 18 02 E S 64 46 E N 36 04 E	1,663 1,542 1,269	Tar. Bellevue. Weather Bureau Staff.
5	38 41 47.34	76 10 03.06	N 11 55 W N 58 37 W S 32 11 W	S 11 55 E S 58 37 E N 32 11 E	1,714 1,446 1,099	Tar. Bellevue. Weather Bureau Staff.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GOOSE NECK.

(Tred Avon River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 41 53.54	76 10 27.80	N 11 33 E	S 11 33 W	1,498	Tar.
			N 46 51 W	S 46 52 E	795	Bellevue.
			S 66 51 W	N 66 50 E	1,118	Tred.
2	38 42 09.66	76 10 43.56	S 09 14 E	N 09 14 W	1,216	Riverview.
			S 76 37 E	N 76 36 W	1,517	Town.
			N 37 47 E	S 37 47 W	1,169	Tar.
3	38 42 22.78	76 10 25.04	S 10 09 W	N 10 09 E	1,669	Riverview.
			S 51 11 E	N 51 10 W	1,266	Town.
			N 25 14 E	S 25 14 W	533	Tar.
4	38 42 27.00	76 10 35.42	S 00 38 W	N 00 38 E	1,786	Riverview.
			S 53 24 E	N 53 24 W	1,570	Town.
			N 55 55 E	S 55 55 W	606	Tar.
5	38 42 38.44	76 10 27.60	S 5 57 W	N 5 57 E	2,184	Riverview.
			S 38 34 E	N 38 34 W	1,691	Town.
			S 81 01 W	N 81 01 W	297	Tar.
6	38 42 32.28	76 10 00.40	S 59 41 W	N 59 40 E	1,511	Bellevue.
			S 16 45 E	N 16 45 W	1,164	Town.
			S 36 23 E	N 36 23 W	1,428	Mud.
7	38 42 11.24	76 10 15.34	N 1 56 W	S 1 56 E	872	Tar.
			S 86 39 W	N 86 38 E	911	Bellevue.
			S 52 38 W	N 52 37 E	1,708	Tred.

PECKS POINT.

(Tred Avon River—Chart No. 34.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 41 50.16	76 09 56.96	N 18 02 W	S 18 02 E	1,663	Tar.
			N 64 46 W	S 64 46 E	1,542	Bellevue.
			S 36 04 W	N 36 04 E	1,269	Weather Bureau Staff.
2	38 42 11.24	76 10 15.34	N 1 56 W	S 1 56 E	872	Tar.
			S 86 39 W	N 86 38 E	911	Bellevue.
			S 52 38 W	N 52 37 E	1,708	Tred.
3	38 42 32.28	76 10 00.40	S 59 41 W	N 59 40 E	1,511	Bellevue.
			S 16 45 E	N 16 45 W	1,164	Town.
			S 36 23 E	N 36 23 W	1,428	Mud.
4	38 42 18.38	76 09 47.40	S 79 52 W	N 79 52 E	1,672	Bellevue.
			S 00 37 W	N 00 37 E	645	Town.
			S 36 33 E	N 36 33 W	848	Mud.
5	38 42 19.34	76 09 34.80	S 26 43 W	N 26 43 E	759	Town.
			S 13 27 E	N 13 27 W	734	Mud.
			S 53 53 E	N 53 52 W	1,575	Golds.
6	38 41 59.24	76 09 47.71	N 0 07 W	S 0 07 E	749	Peck.
			N 77 54 W	S 77 55 E	1,676	Bellevue.
			S 56 27 W	N 56 26 E	1,537	Riverview.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MARES POINT.

(Tred Avon River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 41 59.38	76 09 33.54	S 78 21 E N 43 29 E N 26 48 W	N 78 21 W S 43 29 W S 26 48 E	1,265 852 834	Golds. Tall. Peck.
2	38 42 06.20	76 09 34.06	S 68 49 E N 57 01 E N 35 09 W	N 68 49 W S 57 02 W S 35 09 E	1,343 715 630	Golds. Tall. Peck.
3	38 42 15.28	76 09 12.56	S 35 52 W S 40 51 E S 76 41 E	N 35 52 E N 40 51 W N 76 40 W	712 1,047 1,132	Mud. Golds. Borough.
4	38 42 30.20	76 08 54.60	S 09 12 E S 39 21 E N 86 10 W	N 09 12 W N 39 21 W S 86 10 W	1,311 988 1,321	Golds. Borough. Layor.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 42 39.38	76 09 00.22	S 35 49 E N 80 12 E N 45 05 E	N 35 49 W S 80 12 W S 45 05 W	1,323 825 1,039	Borough. Twin. Weave.
6	38 42 42.98	76 08 44.00	S 16 10 E N 87 11 E N 26 38 E	N 16 09 W S 87 11 W S 26 38 W	1,243 384 685	Borough. Twin. Weave.
7	38 42 29.82	76 08 32.40	N 28 30 W N 68 01 W S 16 23 W	S 28 30 E S 68 01 E N 16 23 E	1,518 756 1,335	Spin. Plain. Golds.
8	38 41 59.60	76 09 18.92	N 78 04 E N 18 08 E N 45 58 W	S 78 05 W S 18 08 W S 45 58 E	1,297 643 1,061	Borough. Tall. Peck.

LOUIS COVE.

(Tred Avon River—Chart No. 34.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 41 44.84	76 08 57.82	N 42 53 E N 17 53 W N 46 54 W	S 42 54 W S 17 53 E S 46 55 E	1,045 1,165 1,808	Borough. Tall. Peck.
2	38 41 52.00	76 09 21.56	N 68 37 E N 17 15 E N 34 53 W	S 68 37 W S 17 15 W S 34 53 E	1,438 908 1,212	Borough. Tall. Peck.
3	38 41 59.60	76 09 18.92	N 78 04 E N 18 08 E N 45 58 W	S 78 05 W S 18 08 W S 45 58 E	1,297 643 1,061	Borough. Tall. Peck.
4	38 42 29.82	76 08 32.40	N 28 30 W N 68 01 W S 16 23 W	S 28 30 E S 68 01 E N 16 23 E	1,518 756 1,335	Spin. Plain. Golds.
5	38 42 17.79	76 08 21.60	N 29 12 E N 13 30 W N 55 04 W	S 29 13 W S 13 30 E S 55 05 E	1,369 893 1,203	Toe. Twin. Plain.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BAMINGS COVE.

(Tred Avon River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 42 29.10	76 08 12.06	N 27 05 E	S 27 05 W	914	Toe.
			N 43 24 W	S 43 24 E	670	Twin.
			N 76 04 W	S 76 04 E	1, 275	Plain.
2	38 42 38.25	76 08 26.32	S 6 40 W	N 6 40 E	1, 042	Borough.
			S 72 13 E	N 72 13 W	599	Layor.
			N 57 30 E	S 57 31 W	940	Toe.
3	38 42 54.24	76 08 13.62	S 16 10 W	N 16 10 E	1, 639	Borough.
			S 18 02 E	N 18 02 W	760	Layor.
			S 74 14 E	N 74 14 W	863	Mistle.
4	38 42 48.86	76 08 00.52	S 76 49 W	N 76 48 E	786	Twin.
			S 11 36 W	N 11 36 E	552	Layor.
			S 83 45 E	N 83 45 W	487	Mistle.
5	38 42 33.25	76 08 06.42	N 21 37 E	S 21 37 W	725	Toe.
			N 60 21 W	S 60 21 E	702	Twin.
			S 36 44 W	N 36 44 E	1, 082	Borough.

OLD HOUSE POINT.

(Tred Avon River—Chart No. 34.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 42 34.73	76 07 48.46	N 12 20 E N 18 25 W N 74 40 W	S 12 20 W S 18 25 E S 74 41 E	827 657 1, 124	Trippe. Toe. Twin.
2	38 42 48.86	76 08 00.52	S 76 49 W S 11 36 W S 83 45 E	N 76 48 E N 11 36 E N 83 45 W	786 552 487	Twin. Layor. Mistle.
3	38 42 58.40	76 07 47.76	S 27 27 W S 21 25 E S 76 59 E	N 27 27 E N 21 25 W N 76 58 W	972 402 795	Layor. Mistle. Venture.
4	38 42 56.28	76 07 38.36	S 77 44 W S 18 50 W S 78 26 E	N 77 44 E N 18 30 E N 78 26 W	486 319 536	Toe. Mistle. Venture.
5	38 42 39.14	76 07 35.50	S 67 38 E N 43 45 E N 14 04 W	N 67 37 W S 43 45 W S 14 04 E	846 651 681	Deux. Venture. Trippe.
6	38 42 38.80	76 07 38.40	S 70 07 E N 47 33 E N 7 33 W	N 70 07 W S 47 33 W S 7 34 E	913 714 677	Deux. Venture. Trippe.
Thence from corner No. 6 along the mean low water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
7	38 42 47.29	76 07 42.20	N 1 43 E N 61 50 W S 50 38 W	S 1 43 W S 61 50 E N 50 38 E	385 423 770	Trippe. Toe. Layor.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

OLD HOUSE POINT—Continued.

(Tred Avon River—Chart No. 34)—Continued.

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
8	38 42 45.40	76 07 45.94	N 13 48 E	S 13 48 W	461	Trippe. Toe. Layor.
			N 46 07 W	S 46 07 E	381	
			S 49 28 W	N 49 28 E	653	
9	38 42 36.80	76 07 46.46	N 9 32 E	S 9 32 W	749	Trippe. Toe. Layor.
			N 25 12 W	S 25 12 E	611	
			S 74 27 W	N 74 27 E	501	

TRIPPE.

(Tred Avon River—Chart No. 34.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 42 46.45	76 07 25.86	S 2 20 E	N 2 20 W	723	Crack. Deux. Cam.
			S 42 52 E	N 42 52 W	775	
			S 72 58 E	N 72 58 W	988	
2	38 42 52.98	76 07 25.60	S 1 22 E	N 1 22 W	943	Crack. Deux. Cam.
			S 33 26 E	N 33 26 W	945	
			S 61 29 E	N 61 28 W	1,067	
3	38 42 52.92	76 07 15.85	S 14 03 W	N 14 03 E	969	Crack. Deux. Cam.
			S 18 30 E	N 18 30 W	830	
			S 53 16 E	N 53 15 W	849	
4	38 42 46.78	76 07 15.85	S 17 47 W	N 17 47 E	770	Crack. Deux. Cam.
			S 24 25 E	N 24 25 W	636	
			S 66 09 E	N 66 09 W	744	

BAKERS COVE.

(Tred Avon River—Chart No. 34.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 42 24.60	76 07 30.20	N 67 03 E	S 67 03 W	1,147	Cam. Venture. Trippe.
			N 17 54 E	S 17 54 W	1,009	
			N 14 53 W	S 14 53 E	1,190	
2	38 42 27.52	76 07 31.92	N 72 28 E	S 72 28 W	1,158	Cam. Venture. Trippe.
			N 22 25 E	S 22 25 W	933	
			N 13 54 W	S 13 54 E	1,083	
3	38 42 .00	76 07 09 12	N 28 12 E	S 28 12 W	640	Plow. Venture. Mistle.
			N 24 27 W	S 24 28 E	596	
			N 68 21 W	S 68 21 E	940	
4	38 42 30.34	76 07 06.10	N 15 45 E	S 15 46 W	819	Plow. Venture. Mistle.
			N 23 03 W	S 23 04 E	834	
			N 59 01 W	S 59 01 E	1,112	

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MARSHY.

(Tred Avon River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 42. 42. 98	76 08 44. 00	S 16 10 E N 87 11 E N 26 38 E	N 16 09 W S 87 11 W S 26 38 W	1,243 384 685	Borough. Twin. Weave.
2	38 43 00. 78	76 08 46. 58	S 37 50 E N 88 15 E N 2 25 E	N 37 50 W S 88 15 W S 2 25 W	736 375 911	Twin. Weave. Martin.
3	38 43 03. 12	76 08 58. 00	S 48 46 E S 84 18 E N 22 14 E	N 48 46 W N 84 17 W S 22 14 W	1,002 680 899	Twin. Weave. Martin.
4	38 43 11. 90	76 08 57. 40	S 37 38 E S 61 08 E N 31 10 E	N 37 38 W N 61 07 W S 31 10 W	1,207 752 626	Twin. Weave. Martin.
5	38 43 09. 80	76 08 37. 38	N 18 39 W S 88 38 W S 28 07 W	S 18 39 E N 88 38 E N 28 07 E	641 594 1,208	Martin. Spin. Plain.
6	38 42 52. 44	76 08 32. 56	N 15 34 W N 51 35 W S 55 26 W	S 15 34 E S 51 35 E N 55 26 E	1,238 920 845	Martin. Spin. Plain.
7	38 42 44. 64	76 08 36. 46	N 36 30 W S 69 56 W S 6 42 E	S 36 30 E N 69 56 E N 6 42 W	1,038 632 1,259	Spin. Plain. Borough.

FLATTY.

(Tred Avon River—Chart No. 34.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 43 18. 50	76 08 20. 96	N 16 59 W N 63 49 W S 73 19 W	S 16 59 E S 63 49 E N 73 19 E	1,070 712 1,072	Neva. Martin. Spin.
2	38 43 18. 96	76 08 26. 54	N 9 18 W N 58 46 W S 69 50 W	S 9 18 E S 58 46 E N 69 49 E	1,023 574 937	Neva. Martin. Spin.
3	38 43 37. 76	76 08 23. 26	N 7 59 W N 33 58 W S 59 48 W	S 7 59 E S 33 58 E N 59 48 E	949 451 668	Robertson. Neva. Martin.
4	38 43 37. 22	76 08 17. 94	N 15 53 W N 45 02 W S 66 07 W	S 15 53 E S 45 02 E N 66 07 E	996 554 786	Robertson. Neva. Martin.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

OREM.

(Tred Avon River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '	Yards.	
1	38 43 20.38	76 08 39.86	S 16 54 E N 75 34 E N 11 01 E	N 16 54 W S 75 34 W S 11 01 W	679 640 978	Weave. Hunter. Neva.
2	38 43 35.52	76 08 45.46	S 16 35 E S 65 26 E N 71 40 E	N 16 34 W N 65 25 W S 71 41 W	1,211 844 1,119	Weave. Hunter. Aye.
3	38 43 37.06	76 08 41.60	S 11 21 E S 58 49 E N 72 39 E	N 11 21 W N 58 48 W S 72 39 W	1,237 779 1,008	Weave. Hunter. Aye.
4	38 43 22.64	76 08 33.48	N 1 11 E N 60 34 W S 57 17 W	S 1 11 W S 60 34 E N 57 16 E	884 353 827	Neva. Martin. Spin.

DOUBLE MILLS.

(Tred Avon River—Chart No. 34.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 43 40.22	76 08 20.35	N 19 57 E N 48 30 W S 57 22 W	S 19 58 W S 48 30 E N 57 22 E	901 439 778	Stretch. Neva. Martin.
2	38 43 43.28	76 08 40.15	S 45 41 E N 84 23 E N 48 09 E	N 45 41 W S 84 23 W S 48 09 W	877 930 1,115	Hunter. Aye. Stretch.
3	38 43 48.27	76 08 29.34	S 23 38 E S 83 07 E N 43 26 E	N 23 38 W N 83 06 W S 43 26 W	852 643 793	Hunter. Aye. Stretch.
4	38 44 04.00	76 08 23.56	S 8 12 E S 38 40 E N 83 23 E	N 8 12 W N 38 40 W S 83 23 W	1,325 779 395	Hunter. Aye. Stretch.
5	38 44 02.62	76 08 10.48	S 51 45 W S 14 05 E S 87 46 E	N 51 44 E N 14 05 W N 87 45 W	750 579 1,078	Neva. Aye. Wall.
6	38 44 05.04	76 08 06.64	S 51 40 W S 3 30 E S 82 46 E	N 51 39 E N 3 30 W N 82 46 W	880 643 983	Neva. Aye. Wall.
7	38 43 49.83	76 07 54.60	N 59 23 E N 35 26 W N 59 04 W	S 59 24 W S 35 26 E S 59 04 E	764 642 1,037	Wall. Stretch. Robertson.
8	38 43 51.61	76 08 07.14	N 71 36 E N 5 05 W N 49 43 W	S 71 36 W S 5 05 E S 49 43 E	1,042 465 732	Wall. Stretch. Robertson.
9	38 43 50.98	76 08 15.40	N 73 49 E N 20 04 E N 34 31 W	S 73 49 W S 20 04 W S 34 31 E	1,257 516 599	Wall. Stretch. Robertson.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

JOHNSTON.

(Tred Avon River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '		
1	38 43 53.00	76 07 41.02	N 35 11 E	S 35 12 W	1,551	Camden.
			N 3 37 W	S 3 37 E	648	May.
			N 60 20 W	S 60 20 E	842	Stretch.
2	38 44 05.14	76 07 43.44	N 67 46 E	S 67 46 W	1,089	Blossom.
			N 5 31 E	S 5 31 W	239	May.
			N 89 24 W	S 89 24 E	667	Stretch.
3	38 44 13.09	76 07 32.32	S 43 29 W	N 43 29 E	1,260	Aye.
			S 9 58 E	N 9 58 W	401	Wall.
			N 78 35 E	S 78 36 W	729	Blossom
4	38 44 06.96	76 07 27.20	N 58 48 E	S 58 49 W	678	Blossom.
			N 3 51 E	S 3 51 W	575	Peebec.
			S 87 10 W	N 87 09 E	1,098	Stretch.

CAMDEN POINT.

(Tred Avon River—Chart No. 34.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 44 16.20	76 07 14.46	N 21 37 E	S 21 37 W	522	Camden.
			N 48 40 W	S 48 40 E	397	Peebec.
			S 79 55 W	N 79 54 E	753	May.
2	38 44 17.27	76 07 20.14	N 37 19 E	S 37 19 W	564	Camden.
			N 33 13 W	S 33 13 E	270	Peebec.
			S 73 52 W	N 73 52 E	617	May.
3	38 44 36.25	76 07 13.58	N 24 00 W	S 24 00 E	652	Stab.
			S 63 17 W	N 63 17 E	143	Neck.
			S 19 04 E	N 19 04 W	674	Blossom.
4	38 44 35.32	76 07 08.40	N 32 40 W	S 32 40 E	745	Stab.
			S 82 56 W	N 82 56 E	267	Neck.
			S 07 50 E	N 07 50 W	611	Blossom.

WATERMELON POINT.

(Tred Avon River—Chart No. 34.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 44 53.40	76 07 12.58	S 10 30 E	N 10 30 W	782	Camden.
			S 85 08 E	N 85 08 W	297	Gash.
			N 29 47 E	S 29 47 W	705	Melon.
2	38 44 53.76	76 07 17.54	S 19 18 E	N 19 18 W	828	Camden.
			S 85 00 E	N 85 00 W	430	Gash.
			N 38 44 E	S 38 44 W	770	Melon.
3	38 45 22.30	76 07 04.92	S 34 22 W	N 34 22 E	496	Water.
			S 22 15 E	N 22 15 W	392	Melon.
			N 73 00 E	S 73 00 W	666	Bateman.
4	38 45 19.90	76 07 01.18	S 49 03 W	N 49 02 E	502	Water.
			S 09 58 E	N 09 57 W	285	Melon.
			N 62 52 E	S 62 52 W	604	Bateman.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HOPKINS.

(Island Creek—Charts Nos. 34 and 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 39 25.86	76 09 21.68	N 34 54 W S 86 59 W S 17 57 W	S 34 54 E N 86 58 E N 17 56 E	744 2,750 3,680	Enter. Choptank River Light. Castle.
2	38 39 39.52	76 09 43.38	N 41 52 W S 74 26 W S 8 03 W	S 41 53 E N 74 25 E N 8 02 E	1,512 2,256 4,000	Boone. Choptank River Light. Castle.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 39 43.22	76 09 32.62	S 37 26 E S 85 18 E N 86 39 E	N 37 25 W N 85 17 W S 86 40 W	530 945 1,729	Landeye. Berry. Jay.
4	38 39 35.08	76 09 09.60	N 59 26 E N 46 58 E N 68 07 W	S 59 26 W S 46 58 W S 68 08 E	387 1,147 803	Berry. Delahay. Enter.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						

WILLIS.

(Island Creek—Charts No. 34 and 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 39 47.13	76 09 04.78	S 36 53 W S 44 32 E N 53 55 E	N 36 52 E N 44 31 W S 53 55 W	691 294 270	Landeye. Berry. Straw.
2	38 39 48.80	76 09 19.60	S 2 07 W S 66 02 E N 80 26 E	N 2 07 E N 66 02 W S 80 26 W	609 654 619	Landeye. Berry. Straw.
3	38 39 52.46	76 09 18.72	S 3 35 W S 55 53 E S 88 00 E	N 3 35 E N 55 53 W N 87 59 W	734 604 587	Landeye. Berry. Straw.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	38 39 51.36	76 09 03.92	S 32 10 W S 27 30 E N 79 49 E	N 32 10 E N 27 30 W S 79 49 W	821 397 982	Landeye. Berry. Jay.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ISLAND CREEK.

(Island Creek—Charts Nos. 34 and 35.)

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Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MATTHEWS.

(Island Creek—Charts Nos. 34 and 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 40 10.06	76 07 57.76	N 33 03 E N 34 59 W S 63 01 W	S 33 04 W S 34 59 E N 63 01 E	690 268 568	Charles. Harry. Kent.
2	38 40 11.20	76 07 59.18	N 37 25 E N 32 39 W S 57 42 W	S 27 25 W S 32 39 E N 57 42 E	689 214 554	Charles. Harry. Kent.
3	38 40 22.80	76 07 47.98	S 18 01 W S 53 52 E N 66 43 E	N 18 01 E N 53 52 W S 66 43 W	583 358 650	Maslin. Healey. Potato.
4	38 40 19.60	76 07 41.18	N 48 49 E N 12 12 W S 80 12 W	S 48 49 W S 12 12 E N 80 12 E	553 270 600	Potato. Charles. Harry.
Thence from corner No. 4 along the mean low water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						

OLD ORCHARD.

(Miles River—Chart No. 34.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 46 44.98	76 12 09.46	S 40 29 E S 78 19 E N 29 02 W	N 40 29 W N 78 18 W S 29 02 E	540 2,200 2,206	Stony. Gibbs. Millwind.
2	38 47 00.58	76 12 34.28	N 20 42 W N 86 12 W S 39 02 E	S 20 42 E S 86 12 E N 39 02 W	1,175 1,576 1,597	Millwind. St. Michaels Water Tank. Stony.
3	38 47 13.60	76 12 26.40	N 32 54 W S 88 59 W S 30 06 E	S 32 54 E N 88 59 E N 30 06 W	1,147 1,780 1,590	Millwind. St. Michaels Water Tank. Stony.
4	38 46 50.94	76 11 53.28	S 7 08 W S 69 31 E N 2 35 E	N 7 08 E N 69 31 W S 2 35 W	617 1,855 2,085	Stony. Gibbs. Fair.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GIBBONS FLATS.

(Miles River—Chart No. 34).

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward.	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 46 21.94	76 11.00.00	S 33 18 W S 71 49 E N 45 12 E	N 33 18 E N 71 49 W S 45 12 W	705 1,015 467	Maiden. Long. Gibbs.
2	38 46 53.50	76 11 46.12	S 20 50 W S 64 36 E N 10 37 E	N 20 50 E N 64 35 W S 10 37 W	747 1,715 1,746	Stony. Gibbs. Leeds.
3	38 47 02.96	76 12 00.00	N 26 13 E N 44 57 W S 5 40 E	S 26 13 W S 44 58 E N 5 40 W	1,557 1,868 1,023	Leeds. Millwind. Stony.
4	38 47 11.24	76 11 37.88	N 61 18 W S 20 26 W S 44 56 E	S 61 19 E N 20 26 E N 44 56 W	2,171 1,383 1,884	Millwind. Stony. Gibbs.
5	38 47 01.30	76 11 27.66	N 57 37 W S 38 04 W S 46 45 E	S 57 38 E N 38 04 E N 46 44 W	2,573 1,220 1,457	Millwind. Stony. Gibbs.
6	38 46 50.92	76 11 00.00	N 59 15 W S 67 36 W S 27 03 E	S 59 16 E N 67 36 E N 27 03 W	3,380 1,604 728	Millwind. Stony. Gibbs.

BAZZLES HILL.

(Miles River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward.	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 46 21.94	76 11 00.00	S 33 18 W S 71 49 E N 45 12 E	N 33 18 E N 71 49 W S 45 12 W	705 1,015 467	Maiden. Long. Gibbs.
2	38 46 44.98	76 12 09.46	S 40 29 E S 78 19 E N 29 02 W	N 40 29 W N 78 18 W S 29 02 E	540 2,200 2,206	Stony. Gibbs. Millwind.
3	38 46 50.94	76 11 53.28	S 7 08 W S 69 31 E N 2 35 E	N 7 08 E N 69 31 W S 2 35 W	617 1,855 2,085	Stony. Gibbs. Fair.
4	38 46 53.50	76 11 46.12	S 20 50 W S 64 36 E N 10 37 E	N 20 50 E N 64 35 W S 10 37 W	747 1,715 1,746	Stony. Gibbs. Leeds.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

LONG POINT.

(Miles River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / //	° / //	° /	° /	Yards.	
1	38 45 44.84	76 10 37.48	N 56 02 W	S 56 03 E	1,184	Maiden. Barnett. Comb.
			S 85 09 W	N 85 08 E	629	
			S 85 05 E	N 85 05 W	1,087	
2	38 45 50.45	76 10 47.28	N 56 52 W	S 56 52 E	864	Maiden. Barnett. Comb.
			S 56 38 W	N 56 37 E	441	
			S 78 07 E	N 78 06 W	1,370	
3	38 45 57.80	76 11 00.00	N 59 56 W	S 59 56 E	447	Maiden. Barnett. Comb.
			S 3 46 W	N 3 46 E	491	
			S 72 28 E	N 72 28 W	1,760	
4	38 46 21.94	76 11 00.00	S 33 18 W	N 33 18 E	705	Maiden. Long. Gibbs.
			S 71 49 E	N 71 49 W	1,015	
			N 45 12 E	S 45 12 W	467	
5	38 46 01.44	76 10 23.04	S 47 03 E	N 47 03 W	958	Comb. Long. Maiden.
			N 1 39 W	S 1 39 E	374	
			N 85 44 W	S 85 45 E	1,367	

BARNETT.

(Miles River—Chart No. 34.)

	° / //	° / //	° /	° /	Yards.	
1	38 45 40.04	76 10 57.24	S 38 36 E	N 38 36 W	1,159	Hall. Comb. Barnett.
			N 87 33 E	S 87 33 W	1,605	
			N 44 04 W	S 44 04 E	151	
2	38 45 46.02	76 11 03.90	S 37 15 E	N 37 15 W	117	Barnett. Long. Maiden.
			N 50 03 E	S 50 04 W	1,393	
			N 24 35 W	S 24 35 E	684	
3	38 45 57.80	76 11 00.00	N 59 56 W	S 59 56 E	447	Maiden. Barnett. Comb.
			S 3 46 W	N 3 46 E	491	
			S 72 28 E	N 72 28 W	1,760	
4	38 45 50.45	76 10 47.28	N 56 52 W	S 56 52 E	864	Maiden. Barnett. Comb.
			S 56 38 W	N 56 37 E	441	
			S 78 07 E	N 78 06 W	1,370	

BOUNDARIES OF NATURAL OYSTER BARS—continued.

COX.

(Miles River—Chart No. 34.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '		
1	38 46 16.13	76 09 22.88	N 27 10 E S 64 12 W S 85 40 W	S 27 10 W S 64 13 E N 85 40 E	Yards. 1,052 911 1,603	Whit. Hunting. Long.
2	38 46 28.88	76 09 26.79	S 24 11 W S 33 37 E N 71 02 E	N 24 11 E N 33 37 W S 71 03 W	1,074 347 1,056	Ham. Kirk. McConnell.
3	38 46 30.98	76 09 19.61	S 30 56 W S 00 25 E N 71 24 E	N 30 56 E N 00 25 W S 71 24 W	1,225 360 854	Ham. Kirk. McConnell.
4	38 46 24.46	76 09 07.19	N 5 46 E N 73 35 W S 88 03 W	S 5 46 W S 73 35 E N 88 02 E	658 756 1,857	Whit. Spree. Beg.
5	38 46 20.94	76 09 14.50	N 47 50 E N 18 31 E N 57 59 W	S 47 50 W S 18 31 W S 57 59 E	911 816 627	McConnell. Whit. Spree.
Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						

CHLORA POINT.

(Middle Choptank River—Chart No. 35.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 37 17.02	76 08 23.70	S 45 23 W S 3 16 W S 63 42 E	N 45 22 E N 3 16 E N 63 41 W	3,580 1,929 2,994	Le Compte. Toot. Howells.
Thence along county boundary as delineated on chart No. 35 to corner No. 2.						
2	38 37 52.86	76 09 25.36	N 47 35 E N 2 15 E S 64 59 W	S 47 36 W S 2 15 W N 64 58 E	1,106 3,304 1,538	Chlora. Landeye. Large water tank.
3	38 38 14.98	76 08 54.49	N 57 03 W S 59 05 W S 10 18 E	S 57 04 E N 59 04 E N 10 18 W	4,131 2,160 3,944	Choptank River Light. Castle. Toot.
4	38 37 35.40	76 08 18.40	S 52 35 E N 82 34 E N 35 34 W	N 52 34 W S 82 35 W S 35 35 E	3,203 1,516 1,641	Howells. Trappe. Chlora.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BEACONS.

(Middle Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / '	° / '	° / '	° / '		
1	38 37 13.20	76 06 50.78	N 40 47 W N 57 31 W S 55 02 W	S 40 48 E S 57 33 E N 55 01 E	1,248 3,879 3,134	Trappe. Chlora. Toot.
2	38 37 21.58	76 07 45.12	S 48 20 E N 43 14 E N 45 33 W	N 48 19 W S 43 15 W S 45 33 E	2,228 909 2,571	Howells. Trappe. Chlora.
3	38 37 58.10	76 07 52.94	N 70 44 W S 15 36 W S 34 36 E	S 70 44 E N 15 35 E N 34 35 W	1,725 3,813 3,295	Chlora. Toot. Howells.
4	38 38 06.64	76 07 40.13	N 81 52 W S 19 20 W S 27 03 E	S 81 51 E N 19 20 E N 27 02 W	1,087 3,813 3,368	Chlora. Toot. Howells.
Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
5	38 37 41.21	76 07 21.59	N 65 08 W S 86 52 W S 32 36 W	S 65 09 E N 86 50 E N 32 36 E	2,709 4,674 3,253	Chlora. Large water tank. Toot.
6	38 37 36.75	76 07 01.72	N 20 49 E N 74 00 W S 1 21 W	S 20 49 W S 74 01 E N 1 21 E	684 547 5,098	Gis. Trappe. Howard.
Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						

LA TRAPPE.

(La Trappe Creek—Chart No. 35.)

	° / '	° / '	° / '	° / '	Yards.	
1	38 37 49.10	76 06 57.42	N 19 22 E N 33 35 W S 67 24 W	S 19 22 W S 33 35 E N 67 24 E	832 546 692	Rice. Lan. Trappe.
2	38 38 00.36	76 07 06.94	S 9 50 E S 67 35 E N 52 26 E	N 9 50 W N 67 35 W S 52 27 W	808 412 666	Grubin. Gis. Rice.
Thence from corner No. 2 along the mean low-water line of the shore to corner No. 3, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
3	38 38 02.40	76 07 03.16	S 2 31 E S 51 12 E N 51 46 E	N 2 31 W N 51 11 W S 51 46 W	866 361 545	Grubin. Gis. Rice.
4	38 38 18.30	76 06 35.39	S 57 01 W S 44 20 W S 17 42 W	N 57 01 E N 44 20 E N 17 42 E	366 1,749 647	Rice. Trappe. Inez.
5	38 38 11.96	76 06 31.00	N 87 59 W S 72 26 W S 37 51 W	S 87 59 E N 72 26 E N 37 51 E	423 1,050 510	Rice. Lan. Inez.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

LA TRAPPE—Continued.

(La Trappe Creek—Chart No. 35)—Continued.

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
6	38 38 00.08	76 06 53.96	N 23 58 E	S 23 58 W	455	Rice. Lan. Grubin.
			N 77 56 W	S 77 57 E	402	
			S 14 37 W	N 14 37 E	814	
7	38 37 49.40	76 06 52.64	N 10 56 E	S 10 56 W	790	Rice. Lan. Trappe.
			N 43 56 W	S 43 57 E	617	
			S 70 10 W	N 70 10 E	815	

HOWELLS POINT.

(Middle Choptank River—Chart No. 35.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 36 08.62	76 06 41.08	N 60 42 E	S 60 43 W	3,153	Red. Howells. Toot.
			N 00 25 W	S 00 25 E	980	
			N 82 15 W	S 82 16 E	2,827	
2	38 36 17.00	76 06 47.70	N 66 31 E	S 66 32 W	3,163	Red. Howells. Toot.
			N 11 41 E	S 11 41 W	712	
			N 87 52 W	S 87 53 E	2,652	
3	38 36 21.46	76 07 24.53	S 63 26 E	N 63 25 W	3,578	Command. Howells. Trappe.
			N 63 57 E	S 63 57 W	1,246	
			N 1 39 E	S 1 39 W	2,690	
4	38 36 38.20	76 07 55.21	S 22 33 E	N 22 32 W	3,380	Howard. Howells. Trappe.
			S 89 28 E	N 89 27 W	1,930	
			N 22 43 E	S 22 43 W	2,303	
5	38 37 04.47	76 07 41.54	S 13 07 E	N 13 07 W	4,115	Howard. Howells. Trappe.
			S 60 04 E	N 60 03 W	1,810	
			N 23 04 E	S 23 05 W	1,346	
6	38 36 55.18	76 06 52.64	N 26 16 W	S 26 16 E	1,731	Trappe. Toot. Howard.
			S 64 44 W	N 64 44 E	2,785	
			S 5 34 W	N 5 34 E	3,713	
Thence from corner No. 6 along the mean low-water line of the shore to corner No. 7, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
7	38 36 23.08	76 06 39.78	N 68 35 E	S 68 36 W	2,890	Red. Howells. Toot.
			N 7 34 W	S 7 34 E	496	
			S 87 52 W	N 87 51 E	2,862	
8	38 36 30.34	76 06 37.90	S 14 43 W	N 14 43 E	2,954	Howard. Command. Red.
			S 45 59 E	N 45 59 W	2,734	
			N 72 56 E	S 72 57 W	2,762	
9	38 36 13.20	76 06 25.27	N 58 57 E	S 58 58 W	2,692	Red. Howells. Toot.
			N 28 33 W	S 28 34 E	940	
			N 86 01 W	S 86 02 E	3,251	

BOUNDARIES OF NATURAL OYSTER BARS—continued.

DICKINSON.

(Middle Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 35 58.78	76 05 55.86	N 39 11 E	S 39 12 W	2,419	Red.
			N 43 06 W	S 43 06 E	1,797	Howells.
			S 46 06 W	N 46 05 E	2,586	Howard.
2	38 36 46.24	76 06 33.60	S 38 25 W	N 38 25 E	369	Howells.
			S 14 17 W	N 14 17 E	3,502	Howard.
			N 83 48 E	S 83 49 W	2,543	Red.
3	38 36 55.65	76 06 31.08	S 26 00 W	N 26 00 E	675	Howells.
			S 14 05 W	N 14 05 E	3,825	Howard.
			S 89 00 E	N 88 59 W	2,461	Red.
4	38 36 29.84	76 05 41.78	N 54 24 E	S 54 24 W	1,422	Red.
			N 80 37 W	S 80 38 E	1,622	Howells.
			S 38 12 W	N 38 11 E	3,615	Howard.
5	38 36 40.84	76 04 43.15	S 88 03 W	N 88 02 E	3,153	Howells.
			S 25 25 W	N 25 25 E	2,495	Command.
			S 49 18 E	N 49 17 W	3,215	Double.
6	38 36 24.38	76 04 53.36	N 81 10 W	S 81 11 E	2,916	Howells.
			S 25 14 W	N 25 14 E	1,878	Command.
			S 60 20 E	N 60 19 W	3,117	Double.
7	38 36 10.60	76 05 12.54	N 71 30 E	S 71 31 W	3,391	Double.
			N 14 32 E	S 14 32 W	1,526	Red.
			N 68 58 W	S 68 59 E	2,544	Howells.
8	38 36 09.56	76 05 26.90	Thence along county boundary as delineated on chart No. 35 to corner No. 8.			
			N 26 46 E	S 26 46 W	1,693	Red.
			N 64 34 W	S 64 35 E	2,208	Howells.
			S 50 39 W	N 50 38 E	3,401	Howard.
			Thence along county boundary as delineated on chart No. 35 to corner No. 1.			

KIRBY.

(Middle Choptank River—Chart No. 35.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 35 36.96	76 04 11.95	S 87 00 W S 36 03 W N 87 58 E	N 86 59 E N 36 03 E S 87 58 W	1,900 1,289 1,613	Command. Cambridge. Double.
Thence along county boundary as delineated on Chart No. 35 to corner No. 2.						
2	38 36 10.60	76 05 12.54	N 71 30 E N 14 32 E N 68 58 W	S 71 31 W S 14 32 W S 68 59 E	3,391 1,526 2,544	Double. Red. Howells.
3	38 36 24.38	76 04 53.36	N 81 10 W S 25 14 W S 60 20 E	S 81 11 E N 25 14 E N 60 19 W	2,916 1,878 3,117	Howells. Command. Double.
4	38 35 53.98	76 03 49.22	N 41 49 W S 76 36 W S 40 05 W	S 41 48 E N 76 35 E N 40 05 E	2,708 1,714 2,113	Red. Hambrooks Bar Beacon. Cambridge.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SCRAPING LINE.

(Middle Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 35 03.79	76 03 26.56	S 88 27 E N 19 15 E N 60 16 W	N 88 26 W S 19 16 W S 60 17 E	1,670 1,246 2,618	Boling. Double. Hambrooks Bar Beacon.
2	38 35 04.16	76 03 51.00	S 88 34 E N 42 16 E N 51 38 W	N 88 33 W S 42 17 W S 51 38 E	2,317 1,573 2,067	Boling. Double. Hambrooks Bar Beacon.
Thence along county boundary as delineated on Chart No. 35						
3	38 35 19.74	76 04 02.77	S 77 29 E N 05 01 E N 24 38 W	N 77 28 W S 65 01 W S 24 38 E	2,691 1,510 3,512	Boling. Double. Red.
4	38 35 11.64	76 03 14.60	S 77 06 E N 5 54 E N 68 16 W	N 77 05 W S 5 54 W S 68 17 E	1,388 916 2,781	Boling. Double. Hambrooks Bar Beacon.

BOLINGBROKE SAND.

(Middle Choptank River—Chart No. 35.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 34 34.04	76 02 59.57	N 78 36 E N 44 54 E N 7 56 W	S 78 37 W S 44 55 W S 7 56 E	2,006 1,353 2,200	Rear. Boling. Double.
Thence along county boundary as delineated on Chart No. 35 to corner No. 2						
2	38 34 40.44	76 03 12.48	N 85 32 E N 60 13 E N 1 07 E	S 85 33 W S 60 13 W S 1 07 W	2,314 1,494 1,963	Rear. Boling. Double.
3	38 35 13.08	76 02 45.08	S 85 34 W S 19 14 W S 57 53 E	N 85 32 E N 19 14 E N 57 53 W	3,068 2,497 675	Cambridge. Shoal. Boling.
4	38 35 03.27	76 02 35.10	N 88 24 W S 28 12 W S 65 55 E	S 88 25 E N 28 12 E N 65 55 W	3,323 2,299 1,444	Cambridge. Shoal. Rear.

THE BLACK BUOY.

(Middle Choptank River—Chart No. 35.)

	° / ' "	° / ' "	° / ' "	° / ' "	Yards.	
1	38 34 18.74	76 01 58.46	S 49 58 E N 20 53 E N 24 13 W	N 49 58 W S 20 53 W S 24 13 E	926 977 1,616	Ferry. Rear. Boling.
Thence along county boundary as delineated on Chart No. 35 to corner No. 2						
2	38 34 24.13	76 02 28.08	N 57 10 E N 5 22 E S 60 58 W	S 57 10 W S 5 22 W N 60 58 E	1,347 1,298 1,456	Rear. Boling. Shoal.
3	38 34 46.00	76 02 20.24	S 89 35 E N 8 51 W N 79 42 W	N 89 35 W S 8 51 E S 79 43 E	925 562 3,776	Rear. Boling. Cambridge.
4	38 34 32.08	76 01 52.26	N 84 15 E N 21 41 E N 38 55 W	S 84 16 W S 21 41 W S 38 55 E	2,403 498 1,317	Whitehall. Rear. Boling.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SUGAR LOAF.

(Middle Choptank River—Chart No. 35.)

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CHANCELLOR POINT.

(Upper Choptank River—Chart No. 35.)

	°	'	''	°	'	''	°	'	''	°	'	''	Yards.	
1	38	34	20.32	76	01	26.22	N 69 29 E N 30 28 W S 78 46 W	S 69 30 W S 30 28 E N 78 45 E	1,820 996 2,967	Whitehall. Rear. Shoal.				
2	38	34	26.46	76	01	27.88	N 76 09 E N 35 17 W S 74 37 W	S 76 10 W S 35 17 E N 74 36 E	1,798 799 2,960	Whitehail. Rear. Shoal.				
3	38	34	42.38	76	01	18.55	S 14 00 W S 85 57 E N 43 53 E	N 14 00 E N 85 56 W S 43 54 W	1,436 1,503 2,824	Ferry. Whitehall. Duck.				
4	38	35	05.22	76	01	23.00	S 6 03 W S 61 32 E N 58 38 E	N 6 03 E N 61 32 W S 58 39 W	2,175 1,839 2,430	Ferry. Whitehall. Duck.				
5	38	35	07.06	76	00	48.15	S 27 23 W S 36 36 E N 43 46 E	N 27 22 E N 36 35 W S 43 47 W	2,505 1,169 1,667	Ferry. Whitehall. Duck.				
6	38	34	39.53	76	01	03.10	N 1 17 W N 79 17 W S 30 15 W	S 1 17 E S 79 18 E N 30 15 E	1,731 1,137 1,502	Barber. Rear. Ferry.				

Thence along county boundary as delineated on chart No. 35 to corner No. 1.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

BRITISH HARBOR.

(Upper Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 35 14.68	76 00 30.08	N 72 03 E	S 72 04 W	3,094	Gander.
			N 35 29 E	S 35 29 W	1,162	Duck.
			N 59 07 W	S 59 07 E	1,063	Barber.
2	38 35 25.36	76 00 55.80	S 29 58 E	N 29 57 W	1,796	Whitehall.
			S 64 00 E	N 63 59 W	1,775	Shell.
			N 66 36 E	S 66 37 W	1,476	Duck.
3	38 35 32.84	76 00 48.36	S 21 09 E	N 21 09 W	1,939	Whitehall.
			S 53 37 E	N 53 36 W	1,737	Shell.
			N 73 54 E	S 73 55 W	1,206	Duck.
4	38 35 38.06	76 00 19.50	S 52 11 W	N 52 11 E	2,875	Rear.
			S 27 44 E	N 27 43 W	1,363	Shell.
			S 66 47 E	N 66 46 W	2,671	Chief.
5	38 35 33.88	76 00 01.76	S 59 24 W	N 59 23 E	3,185	Rear.
			S 8 46 E	N 8 46 W	1,078	Shell.
			S 65 19 E	N 65 18 W	2,184	Chief.
6	38 35 29.35	75 59 58.01	N 77 38 E	S 77 39 W	2,144	Gander.
			N 21 05 W	S 21 05 E	484	Duck.
			N 88 21 W	S 88 21 E	1,762	Barber.
Thence along county boundary as delineated on chart No. 35 to corner No. 1.						

GOOSE POINT.

(Upper Choptank River—Chart No. 35.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 35 29.35	75 59 58.01	N 77 38 E	S 77 39 W	2,144	Gander.
			N 21 05 W	S 21 05 E	484	Duck.
			N 88 21 W	S 88 21 E	1,762	Barber.
2	38 35 33.88	76 00 01.76	S 59 24 W	N 59 23 E	3,185	Rear.
			S 8 46 E	N 8 46 W	1,078	Shell.
			S 65 19 E	N 65 18 W	2,184	Chief.
3	38 35 47.52	75 59 45.76	S 48 42 E	N 48 42 W	2,078	Chief.
			S 85 02 E	N 85 01 W	1,777	Gander.
			N 59 11 E	S 59 12 W	2,385	War.
4	38 35 46.40	75 59 12.80	S 27 19 E	N 27 19 W	1,502	Chief.
			S 82 40 E	N 82 39 W	906	Gander.
			N 43 01 E	S 43 02 W	1,724	War.

Survey of Oyster Bars, Talbot County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MILL DAM.

(Upper Choptank River—Chart No. 35.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
1	38 35 46.40	75 59 12.80	S 27 19 E S 82 40 E N 43 01 E	N 27 19 W N 82 39 W S 43 02 W	Yards. 1,502 906 1,724	Chief. Gander. War.
2	38 36 00.58	75 59 35.54	S 35 28 E S 68 24 E N 66 16 E	N 35 28 W N 68 23 W S 66 17 W	2,224 1,613 1,941	Chief. Gander. War.
3	38 36 19.46	75 59 25.95	S 45 21 E N 84 34 E N 48 42 E	N 45 21 W S 84 34 W S 48 43 W	1,751 1,530 1,971	Gander. War. Wick.
4	38 36 29.37	75 59 02.88	S 22 06 E S 78 18 E N 42 00 E	N 22 05 W N 78 17 W S 42 00 W	1,689 933 1,300	Gander. War. Wick.
5	38 36 26.90	75 58 57.27	S 18 11 E S 82 07 E N 34 31 E	N 18 11 W N 82 07 W S 34 31 W	1,559 772 1,274	Gander. War. Wick.

Thence along county boundary as delineated on Chart No. 35 to corner No. 1.

JAMAICA POINT.

(Upper Choptank River—Chart No. 35.)

	° / "	° / "	° / "	° / "	Yards.	
1	38 36 32.47	75 58 58.80	S 17 32 E S 69 58 E N 41 29 E	N 17 31 W N 69 57 W S 41 30 W	1, 751 857 1, 150	Gander. War. Wick.
2	38 36 34.74	75 59 10.36	S 25 31 E S 71 34 E N 53 40 E	N 25 30 W N 71 34 W S 53 41 W	1, 935 1, 171 1, 325	Gander. War. Wick.
3	38 36 43.05	75 59 07.98	S 20 49 E S 58 11 E N 63 19 E	N 20 49 W N 58 10 W S 63 19 W	2, 168 1, 234 1, 124	Gander. War. Wick.
4	38 36 41.02	75 58 56.60	S 13 28 E S 52 05 E N 50 50 E	N 13 28 W N 52 04 W S 50 50 W	2, 013 947 908	Gander. War. Wick.

SPAR BUOY.

(Upper Choptank River—Chart No. 35.)

[illegible]

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

Survey of Oyster Bars, Talbot County, Md.

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-six, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven * * *.

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars * * *.

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved March 4, 1909.]

AN ACT Making appropriation for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and ten, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and ten, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of Congress approved June 25, 1910.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eleven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eleven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys, * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available fifteen thousand dollars.

[Act of Congress approved March 4, 1911.]

AN ACT Making appropriation for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and twelve, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and twelve, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available, thirteen thousand dollars.

[Act of the Legislature of Maryland approved April 2, 1906.]

AN ACT To establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That the following sections be, and they are hereby, added to article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis, and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie. * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section.

* * * * *
SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the same to the Clerks of the Circuit court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural

oyster beds, bars or rocks shall be construed in all the courts of the State to be barren bottoms and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act, provided, that the said survey and report shall not be construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act.

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the survey, is as follows:

AN ACT Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or leveling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.¹ *And be it enacted*, That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses (to be by them sworn or affirmed and examined), shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first

¹ Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from Second Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman oyster culture law, upon the statute books of Maryland, had a twofold object in view:

"1. To encourage an industry in oyster culture upon the barren bottoms beneath the tidewaters of the State.

"2. To prevent the leasing of natural oyster bars for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

DEFINITION OF A NATURAL OYSTER BAR.

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman oyster culture law to exercise its judgment liberally in favor of the natural bars when surveying, charting, and buoing them, but other than this the commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the commission.

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally, even though now practically barren of oysters, should be considered natural bars. Other citizens of the State, who are not directly interested in the oyster business but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which by methods known to oyster culturists may be made to yield a greater number of oysters than they now produce.

"It should be evident to everyone that neither of these definitions could be adopted by the commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

The definition of a natural oyster bar which very nearly approaches a reasonable and satisfactory compromise between the views of the subject held by oystermen on one hand and by oyster culturists on the other is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Todd v. Job T. Moore.

This definition has been adopted by the Shell Fish Commission as the basis for the determination of the status of the various oyster bottoms surveyed, and is as follows:

What, then, is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State

where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible; but if so, I imagine that their extent must be too limited for them to be of much practical general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them, and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters within the meaning of the act of assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and can not be located or appropriated by any individual.

APPLICATION OF DEFINITION.

Before this definition may be of use in determining accurately and scientifically the status of an oyster ground, its central idea, "livelihood," must be expanded into accurately determinable factors, and these factors must be combined into a practical scheme of investigating the condition of the ground under consideration.

Stated briefly, a livelihood is represented by a sum of money obtained from the sale, at a fixed price, of a certain quantity of oysters gathered in a given time from an allotted area of ground.

Knowing the value of each of these factors, it becomes possible to calculate the number of oysters an oyster ground must produce per square yard in order that oystermen may secure a livelihood by working upon it.

NOTE.—The factors into which the commission resolved the livelihood problem, the value assigned to each factor, and the scheme devised for practical use in examining and applying the definition to oyster bottoms are given in outline in their second report under the heading of the preceding extract, and in detail in their first report on pages 32 to 69.

APPENDIX C.—SUMMARY OF THE PARTICULAR SURVEYING OPERATIONS WHICH CONSTITUTE AN "OYSTER SURVEY" AS NOW BEING CARRIED ON IN MARYLAND.

Explanation.—A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland, will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest practical accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Triangulation survey.—Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a framework or foundation. Therefore, a triangulation survey, including the permanent marking of the positions of landmarks with monuments, and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

Topographic survey.—The technical records which establish the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the leasable bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore a topographic survey is a necessary operation of a complete oyster survey.

Hydrographic survey.—In the settlement of the important question of what is or what is not a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore a hydrographic survey is a necessary operation of a complete oyster survey.

Necessary foundation for an oyster survey.—Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Special surveys and investigations pertaining to oysters.—Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations¹ making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding-boat party in addition to the usual hydrographic work.² This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

The special oyster investigations³ consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

Preparation of results.—The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.⁴ This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for publication by the Government, the preparation of that part of the annual report of the commission covering the special oyster surveys and investigations, the making of the leasing charts and finished projections, and finally the filing of the oyster charts and records with the courts and the commission, thus opening a county for oyster culture.

Summary.—From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

¹ See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

² See pp. 104 to 123 of "First Annual Report of Maryland Shell Fish Commission."

³ See pp. 30 to 67 and 129 to 199 of "First Annual Report of Maryland Shell Fish Commission."

⁴ No mention is made here of the large amount of administrative work of the commission, which is greatly complicated and increased by the effect of the oyster-survey operations on many thousands of people whose interests are more or less involved; or of the large amount of survey work involved in the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

Survey of Oyster Bars, Talbot County, Md.

APPENDIX D.—STATISTICS OF RESULTS OF THE COMBINED OYSTER SURVEY OPERATIONS OF THE GOVERNMENT AND STATE.¹

Operations	Anne Arundel County	Somerset County	Wicomico County	Worcester County	Calvert County	Charles County
Beginning of field work.....	June 29, 1906	May 2, 1907	Aug. 27, 1907	Nov. 8, 1907	May 2, 1908	Aug. 18, 1908
Filing of certified charts and reports.....	June 20, 1907	July 1, 1908	Dec. 1, 1908	Apr. 12, 1909	Dec. 14, 1909	Jan. 27, 1911
Natural oyster bars surveyed and delineated ²	91	37	15	28	41	15
Acres of natural oyster bars.....	33,577	27,500	2,038	1,655	12,303	2,285
Crab bottoms surveyed and delineated.....	54	54				
Acres of crab bottoms.....	32,108	32,108				
Clam beds surveyed and delineated.....	3	3				
Acres of clam beds.....	500	500				
Boundary buoys located and planted.....	362	154	53	104	140	51
Triangulation landmarks established.....	123	86	30	48	78	42
Miles of shore line covered by triangulation.....	110	125	46	95	95	32
Square miles of water covered by triangulation.....	220	375	44	110	157	20
Miles of examination of shell bottom with chain apparatus.....	425	340	59	63	250	38
Oyster investigation stations occupied.....	440	679	162	147	667	113
Tide stations established.....	4	3	1	1	2	1
Number of soundings over shell bottoms.....	37,049	17,904	3,387	3,649	11,292	1,631
Square miles covered by soundings and chain apparatus.....	58	55	3	3	30	4
Projections prepared and plotted.....	9	13	2	5	8	3
Leasing charts prepared.....	13	12	2	3	5	2
Oyster charts published.....	4	6	2	3	5	1
Reports published.....	2	2	2	2	2	2
Progress maps published.....	2	2	2	2	2	

Operations	St. Marys County	Baltimore County	Kent County	Queen Annes County	Talbot County	Total ²
Beginning of field work.....	May 2, 1908	Apr. 14, 1909	Apr. 14, 1909	Apr. 14, 1909	July 6, 1909	
Filing of certified charts and reports.....	July 6, 1911	Aug. 10, 1911	Oct. 5, 1911	Nov. 29, 1911	July 20, 1912	
Natural oyster bars surveyed and delineated ²	124	3	64	98	132	648
Acres of natural oyster bars.....	25,755	3,010	12,809	24,721	36,564	182,283
Crab bottoms surveyed and delineated.....						54
Acres of crab bottoms.....						32,108
Clam beds surveyed and delineated.....						3
Acres of clam beds.....						500
Boundary buoys located and planted.....	375	12	211	340	529	2,340
Triangulation landmarks established.....	238	15	147	199	336	1,022
Miles of shore line covered by triangulation.....	160	12	110	240	230	1,070
Square miles of water covered by triangulation.....	180	50	130	500	240	1,710
Miles of examination of shell bottom with chain apparatus.....	400	33	164	288	511	2,571
Oyster investigation stations occupied.....	1,472	64	1,151	1,949	1,975	8,819
Tide stations established.....	7	1	3	3	5	26
Number of soundings over shell bottoms.....	19,344	1,080	8,123	13,880	20,213	137,552
Square miles covered by soundings and chain apparatus.....	57	6	21	47	77	361
Projections prepared and plotted.....	15	4	10	12	14	69
Leasing charts prepared.....	10	1	4	11	12	53
Oyster charts published.....	8	1	3	4	7	35
Reports published.....	2	2	2	2	2	15
Progress maps published.....	2	1	1	1	1	13

¹ These statistics do not include the large amount of triangulation, topography, and hydrography resulting from previous work of the Coast and Geodetic Survey, which was utilized in the preparation of the published oyster charts and records. Work in Kent, Queen Annes, Talbot, and Dorchester Counties has been finished, but final statistics of results will not be published until these counties are opened for oyster culture.

² Less quantities covered by statistics of more than one county.

³ Total area of natural oyster bars of Connecticut, 5,770 acres.

CHART No.31

CHART No.32

COAST AND GEODETIC SURVEY
 PROGRESS MAP
 TALBOT COUNTY
 MARYLAND

To accompany report of work of United States
 Coast and Geodetic Survey in cooperation
 with the Maryland Shell Fish Commission

- Landmarks (Coast Survey Triangulation Stations)
- Waters contiguous to county
- Waters within territorial limits of county
- Limits of projections on file at Washington
- Limits of charts published by Coast and Geodetic Survey

CHART No.33

CHART No.34

CHART No.35

CHART No.36

CHART No.37

DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY
O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

WICOMICO COUNTY MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND REPORT
OF WORK OF UNITED STATES COAST AND GEODETIC SUR-
VEY IN COOPERATION WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE

1909

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, November 12, 1908.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, and certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shell fish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, and 1909.

Respectfully,

O. H. TITTMANN, *Superintendent.*

To Hon. OSCAR S. STRAUS,
Secretary of Commerce and Labor.

CERTIFICATION.

ANNAPOLIS, MD., *November 10, 1908.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in the waters of Wicomico County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,
Chief of Coast and Geodetic Survey Party,
Assistant, Coast and Geodetic Survey.

ANNAPOLIS, MD., *November 10, 1908.*

Examined and certified to be correct.

WALTER J. MITCHELL,
CASWELL GRAVE,
BENJAMIN K. GREEN,
Maryland Shell Fish Commission.
SWEFSON EARLE,
Hydrographic Engineer.

NOTE.—As required by law, certified copies of this publication and of the charts of the natural oyster bars of "Wicomico County and Adjacent Waters" were filed in the office of the clerk of the circuit court of Wicomico County and in the office of the Board of Shell Fish Commissioners, at Annapolis, on December 1, 1908.

CONTENTS.

	Page.
PROGRESS MAP.....	Follows 54
LETTER OF SUBMITTAL.....	3
CERTIFICATION.....	5
INTRODUCTION:	
Publications.....	9
Cooperation of the Coast and Geodetic Survey.....	10
Cooperation of the Bureau of Fisheries.....	10
General remarks.....	10
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions.....	13
Organization and equipment.....	13
Chronological statement of work.....	14
Statistics.....	15
General statement.....	15
CHARTS AND MAPS:	
Charts of natural oyster bars.....	17
Leasing charts.....	18
Projections.....	19
Progress maps.....	19
BOUNDARIES OF THE COUNTY WATERS:	
Waters within territorial limits of county.....	20
Waters contiguous to county.....	20
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation of descriptions of landmarks.....	21
Descriptions of triangulation stations—	
<i>Chart No. 11 (Middle Nanticoke River)—</i>	
Cow (see also Chart No. 12).....	23
Okay.....	23
Ar.....	24
Gover.....	24
Streett.....	25
Earle.....	25
Juliet.....	25
Pole.....	26
Bivalve Church.....	26
Rag.....	26
Nanticoke Church (see also Chart No. 12).....	26
<i>Chart No. 12 (Nanticoke and Wicomico rivers)—</i>	
Cow (see also Chart No. 11).....	23
Nanticoke Church (see also Chart No. 11).....	26
Crab.....	27
Sharkfin Shoal Light.....	27
Head.....	27
Frog.....	28

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations—Continued.

Chart No. 12 (Nanticoke and Wicomico rivers)—Continued.

	Page.
Roar.....	28
Nanti.....	29
White.....	29
Ella.....	29
Holland.....	30
Child.....	30
Creek.....	31
End.....	31
Walnut.....	32
Jones.....	32
Ivee.....	32
Mount Vernon Church.....	33
Ball.....	33
Wind.....	33
Little.....	34
Dove.....	34
Great Shoals Light.....	35
Short.....	35
Room.....	35
Haines.....	36
Deal Island Church.....	36
Bar.....	36

BOUNDARIES OF OYSTER BARS:

Explanation of descriptions of boundaries.....	38
Surveying methods for relocation of boundaries.....	39

Boundaries of natural oyster bars—

Chart No. 11 (Middle Nanticoke River)—

Upper Stake.....	42
Wetipquin.....	42
Sand Lump.....	43
Hickory Nut.....	43
Old Womans Patch.....	43
Cedar Shoal.....	44
Long Shoal.....	44
Cherry Tree.....	44
Wilson Shoals.....	45
Roaring Point East (see also Chart No. 12).....	45

Chart No. 12 (Nanticoke and Wicomico rivers)—

Roaring Point East (see also Chart No. 11).....	45
Middleground.....	46
Big Hill.....	46
Great Shoals.....	47
Ingram Shoal.....	47
Holland.....	48

APPENDICES:

Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.....	49
Appendix B.—“The Haman Oyster Culture Law” (extract from First Report of Shell Fish Commission).....	52
Appendix C.—Statistics of results of the combined operations of the Government and State.....	53

SURVEY OF OYSTER BARS, WICOMICO COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws^a authorizing the work and the natural division of the surveying operations of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.^b The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report^c of the representative of the Coast and Geodetic Survey in charge of the work of that Service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.

The part prepared and issued by the State under the direction of the Shell Fish Commission consists of an annual report^d of all the operations of the Commission performed under the provisions of the laws of Maryland,^e including results of biological

^a See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

^b These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C. The publications ready for issue are those for Anne Arundel, Somerset, and Wicomico counties. Those for Worcester, Calvert, St. Marys, and Charles counties are now being prepared.

^c See page 13 and the progress map attached to this publication.

^d These reports can be obtained by application to the Shell Fish Commission, Annapolis, Md. They are issued annually in October, and the first report is now available for distribution.

^e See Appendix B for an extract from the "First Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman Oyster Culture Law."

and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the Service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.^a A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the Bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL REMARKS.

A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations

^a Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest attainable accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation, it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a frame work or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

The technical records which established the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation, as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the barren bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations^a making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding boat party in addition to the usual hydrographic work.^b This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

^a See Appendix C of this publication for "Statistics of results of combined operations of the Government and State."

^b See pages 104 to 123 of "First Annual Report of Maryland Shell Fish Commission."

The special oyster investigations^a consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.^b This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for record and publication by the Government, the manufacture and planting of "State buoys" at all corners of the oyster-bar boundaries, the preparation of that part of the annual report of the Commission covering the oyster investigations, the making of the leasing charts and finished projections, and finally the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

^a See pages 30 to 67 and 129 to 199 of "First Annual Report of Maryland Shell Fish Commission."

^b No mention is made here of the large amount of administrative work of the Commission, which is greatly complicated and increased by the economic and political effect of the oyster-survey operations on many thousands of people whose interests are more or less involved.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY.

INSTRUCTIONS.

The two following letters, together with the laws^a of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the Survey at Washington, has proved very beneficial to the work, and is greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,

Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His excellency HON. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the commissioners, prepare a programme of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,
U. S. C. and G. S. Steamer Endeavor, Baltimore, Md.

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the

^a For these laws see Appendix A.

field and the preparation for publication of charts and technical records in the Office at Washington.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster*, the Coast and Geodetic Survey party has had the constant use of the large steam launch *Inspector* and several other boats furnished by its own Service, and the occasional use of the Bureau of Fisheries launch *Canvasback*^a and the steamer *Governor McLane*^b of the State fishery force.

The greater part of the equipment of instruments for the operations of both the Government and State has been furnished by the Coast and Geodetic Survey and consists of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.^c

On June 20, 1907, the work in connection with the publication of the "Charts of Natural Oyster Bars" and report^d of "Survey of Oyster Bars" for Anne Arundel County was finally completed and the survey records and reports for that county were ready for filing in the archives of the Survey at Washington.

In addition to this work, a Coast and Geodetic Survey signal-building party was engaged in the erection of triangulation signals in Somerset County from May 2 to June 25 in cooperation with a signal-building party of the Shell Fish Commission.

From June 25 until the practical completion of the field work in Somerset and Wicomico counties on November 6, the usual routine of field and office work was followed without material interruption except that resulting from the moving of the house boat *Oyster* from Crisfield to Manokin River on July 13, then to Piney Island on August 27, and to Wicomico River on August 30, where she remained until her removal to Nanticoke River on September 30, 1907.

From this latter date the work in Wicomico County predominated until the field surveys of that county were completed, when the entire party left by rail for Worcester County, it being impracticable to move the house boat to the waters of that locality.

At the close of the survey work in Worcester County in the last part of December, office work relating to Somerset and Wicomico counties was begun at Baltimore,^e and was continued without material interruption until March 23, 1908, when a subparty went to Worcester and Somerset counties to finish some details of field work in those sections required for the preparation of the technical reports and oyster charts.

^a By courtesy of Dr. H. F. Moore, U. S. Bureau of Fisheries.

^b By courtesy of Capt. James A. Turner, commanding.

^c The field and office work relating to Somerset County is so intermixed with that of Wicomico County that this statement includes the work of both counties.

^d See that report for an account of the work from July 3, 1906, to June 20, 1907.

^e Office rooms were furnished for the work of the Government party in the "old court-house" and afterwards in the new custom-house by courtesy of Hon. William F. Stone, collector of customs.

The very large amount of work of computation and drafting necessary to make the results of the survey of the previous season available for publication was nearly completed on May 2, 1908, when it was transferred to the Government quarters on the house boat *Oyster*, which left Baltimore on the same day with the party and outfit for her anchorage off Solomons Island, in the Patuxent River.

On July 1, 1908, certified copies of the technical report and oyster charts of Somerset County were filed in the office of the clerk of the circuit court of Somerset County and in the office of the Board of the Shell Fish Commissioners, at Annapolis, thus opening that county for oyster culture on that date.

STATISTICS.^a

Landmarks and triangulation signals erected.....	30
Monuments planted to mark triangulation stations.....	30
Triangulation stations occupied for observations of horizontal angles.....	32
Old triangulation stations recovered.....	5
New triangulation stations established.....	32
Total old and new triangulation stations marked and described.....	37
Linear miles of shore line covered by triangulation (approximate).....	46
Square miles covered by triangulation (approximate).....	44
Hydrographic projections prepared and completed as records of oyster boundaries.....	2
Triangles computed.....	80
Geographic positions computed.....	37
Corners of oyster boundaries established by computation.....	56
Back azimuths and distances computed from corners of boundaries to triangulation stations.....	168
Descriptions of triangulation stations prepared for publication.....	37
Descriptions of oyster boundaries prepared for publication.....	15
Total typewritten pages of manuscript prepared for publication of report.....	115
"Charts of Natural Oyster Bars" prepared for publication.....	2
Progress map prepared for publication.....	1

GENERAL STATEMENT.

The results obtained from the work of the Coast and Geodetic Survey in Wicomico County in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need no other summary than is indicated by the published "Charts of Natural Oyster Bars" and the scheme of hydrographic projections and triangulation stations shown on the progress map at the end of this report.

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster survey operations.

The hydrographic projections and published charts were prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various

^a These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of Wicomico County, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland.

shell-fish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to by published technical descriptions which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County:"

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last sixty-five years.

In fact, when the survey of the oyster bars of Maryland is completed, it is believed that it will stand the test of time and practical use as a working foundation for whatever form the oyster legislation of the future may assume, and that the doing of the work systematically and accurately, once for all, not only means a better foundation of a great oyster industry by irradicably locating the natural oyster bars for the use of the public, but also a better and more permanent superstructure of oyster culture for the individual by the reason of the integrity of the foundation on which it stands.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unfailing tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

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To Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

To Thomas H. Robinson, counsel to the Commission, for courteously furnishing valuable information relating to county boundaries.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts^a of the natural oyster bars of "Wicomico County and Adjacent Waters," published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, consist of two sheets covering the eastern shore of Nanticoke River and the northern shore of Wicomico River, including all oyster-producing bottoms of Wicomico County. They are published on a scale of 1 part in 20,000 (approximately $3\frac{1}{4}$ inches to a statute mile) and are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the circuit court of Wicomico County and in the office of the Commission at Annapolis, as required by the oyster laws of Maryland.

In addition to the oyster-bar and other boundaries, the charts show the location and name of all landmarks (U. S. Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography^b necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the headings of "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a

^a These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

^b Much of the details of the inshore topography was obtained from the excellent map of Wicomico County prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the U. S. Geological Survey.

particular oyster bar or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shell-fish industries. The 1-fathom contour (6 feet) corresponds in a general way to the outer limits of the crab bottoms, while the waters outside of this curve and inside the 5-fathom contour (30 feet) practically include all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" opened up for the leasing with Wicomico County are plainly indicated on the charts. A description of this boundary is given in this publication under the heading "Boundaries of the county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart and are usually located within the boundaries of the different areas.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Wicomico County, like those for Anne Arundel and Somerset counties, have been prepared under the direction of the hydrographic engineer of the Commission. These charts are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey. They are made on the scales of 1 part in 5,000 or 1 part in 10,000, as the needs of oyster culture may require. Anne Arundel County required 13 leasing charts, Somerset County 12, and Wicomico County 2 to cover their oyster bottoms.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small

rectangles of 1 acre or 5 acres, as may be best suited to area under consideration, and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as practicable.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in Annapolis.

PROJECTIONS.

The polyconic projections^a covering Wicomico County waters are 2 in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, who also plotted the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the office of the Shell Fish Commission at Annapolis.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the U. S. Coast and Geodetic Survey in Wicomico County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress map^b accompanying the "First Annual Report of the Maryland Shell Fish Commission" was prepared under the direction of the hydrographic engineer of the Commission. It is on the scale of 1 part in 400,000 and shows the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey of Maryland.

^a For the scheme of these projections see the progress map at the end of this publication.

^b This map and report can be obtained by application to Maryland Shell Fish Commission, at Annapolis, Md.

BOUNDARIES OF THE COUNTY WATERS.^a

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line^b between the waters "within the territorial limits" of Wicomico County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the charts and the smooth projections of the Coast and Geodetic Survey, is identical with the boundary line between Wicomico County and the adjacent counties of Dorchester and Somerset; therefore technically all waters opened up for leasing with Wicomico County are within the "territorial limits" of that county.

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the U. S. Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Annapolis," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county, and the waters contiguous to but not within the territorial limits of adjacent counties. But technically, as explained under the preceding heading of "Waters within territorial limits of county," there are no "waters contiguous to the county" in Wicomico County; and therefore there are no waters opened up for leasing with that county in which a person can lease "a greater amount than ten acres."

^a For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, Superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

^b See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION OF DESCRIPTIONS OF LANDMARKS.

The oyster laws of Maryland authorizing the surveys to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of locations of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking to find a landmark has only an indefinite idea of its location. They then gradually proceed from general descriptions of the surroundings of a landmark to the specific details of the character of the center and reference markings. An examination of the descriptions themselves will best indicate the method followed.

The heading of each description is the name by which the landmark or triangulation station is known and designated in all work and records of the Government and State.

Under the heading of "Locality" the first paragraph gives a description of the general locality of the landmark and the serial number of the published "Chart of Oyster Bars" of Maryland which best shows its location. The published charts are on the large scale of 1 part in 20,000, and show the location of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Under the same heading of "Locality" the second paragraph furnishes the description of the immediate locality of the landmark and refers to the bearing and distance of standard cement monument marking the reference station, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached.

Under the heading of "Marks" a description is given of the character of the markings of the "observed station" and the reference station. It will be noted that, although

the "observed station" is the one "occupied" and "observed on" for horizontal angles, and also the one whose geographic position is computed, frequently it is not marked as well as the reference station, and in many instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate these stations on edges of banks and ends of points of land, which in Chesapeake Bay and tributaries generally means that they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the necessity of reference marks, if the frequent reestablishment of a new framework of triangulation is to be avoided.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom, the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

It is the expectation that the reference stations,^a the character of which is explained above, will be used in many cases in the near future in the place of the "observed stations." This has been made possible by the careful measurements of direction and distance of these stations from the "observed station," which are recorded under the heading of "References."

Under the heading of "References" are given the directions and distances of all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing^b of the initial object is always given in parenthesis alongside the name. This furnishes means for the calculation of the bearings of any of the other

^aTo obtain the geographic positions of any of the "observed stations" or of the "reference stations," application should be made to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

^bThe mean magnetic variation for Wicomico County is $5^{\circ} 45'$ west of north (1908) and is increasing at the rate of $3'$ yearly.

reference objects for the purposes of locating a station by compass bearings or for the relocation of corner buoys of oyster-bar boundaries by the method of horizontal angles described in this publication under the heading of "Boundaries of oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of direction with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

COW.

Locality.—Western shore Nanticoke River on Mink Point about $\frac{1}{4}$ mile east of entrance to Cow Creek. See Charts Nos. 11 and 12.)

Observed station is on a very soft marsh point at the outer edge of water bushes about 5 yards back from the shore to the east, 15 yards from extreme end of point to the southeast, and 15 yards from the shore to the southwest. No permanent reference objects near station. Cement monument marking reference station is 8.68 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Frog" (S 6° 13' W)	0	00	00	2 miles.
A shanty	37	16	--	$\frac{3}{4}$ mile.
REFERENCE STATION	129	19	20	8.68 meters
White shanty	189	53	--	1 mile.
A shanty	209	52	--	$\frac{1}{2}$ mile.
Tangent of land	217	43	--	$\frac{1}{4}$ mile.
Large red roof greenhouse	236	48	--	$2\frac{1}{2}$ miles.
Windmill	243	52	--	$2\frac{3}{4}$ miles.
Gambrel of house	244	13	--	$2\frac{1}{2}$ miles.
Chimney of large greenhouse	254	24	--	$2\frac{1}{4}$ miles.
Canning house stack	257	28	--	$1\frac{3}{4}$ miles.
Canning house stack	275	26	--	$1\frac{1}{2}$ miles.
Near corner of Nanticoke wharf	284	49	--	$1\frac{1}{2}$ miles.
Large red roof white house	297	32	--	$2\frac{1}{2}$ miles.
Large red roof white house	299	24	--	$2\frac{1}{2}$ miles.
Right tangent of Nanticoke woods	310	15	--	3 miles.
Left tangent of Sandy Point	341	48	--	$1\frac{1}{2}$ miles.

OKAY.

Locality.—Western shore of Nanticoke River about $\frac{1}{8}$ mile south of Swan Creek Cove on Marsh Point. (See Chart No. 11.)

Observed station is on marsh land about 2 feet above and 10 yards back from high-water mark. A shanty known as Insleys watch house stands about 35 yards north of observed station. No other permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
Bivalve Church (N 84° 32' E)	0	00	00	$2\frac{1}{2}$ miles.
Chimney of red roof house	20	38	--	$2\frac{1}{2}$ miles.
Windmill tower	46	41	--	$2\frac{1}{2}$ miles.
Tangent of land	92	23	--	$1\frac{1}{4}$ miles.

*Survey of Oyster Bars, Wicomico County, Md.**References—Continued.*

	°	'	"	
Tangent of land.....	105	45	--	150 yards.
Left side of watch house.....	249	17	--	35 yards.
Right side of watch house.....	258	17	--	35 yards.
Space between chimneys of large white house.....	340	43	--	3¼ miles.
Tangent of Bivalve wharf.....	355	31	--	2¼ miles.
Stack of canning house.....	359	12	--	2¼ miles.

AR.

Locality.—Western shore of Nanticoke River about 1½ miles northwest by west of Bivalve wharf. (See Chart No. 11.)

Observed station is on marsh land between two small creeks about 40 yards back from high-water mark. It is about 43 yards northwest of the mouth of one creek, and 35 yards west-southwest of mouth of the other creek. No permanent objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Nanticoke Church" (S 13° 34' E).....	0	00	00	3¾ miles.
Right edge Sandy Point woods.....	23	58	--	4 miles.
Smoke pipe of cabin near "Okay".....	42	57	--	1½ miles.
Chimney on house.....	46	26	--	½ mile.
Left tangent of first woods.....	81	20	--	2¾ miles.
Left tangent of long thick woods.....	98	53	--	1 mile.
Left edge short thick woods.....	134	11	--	1 mile.
Chimney of red roof cabin.....	247	47	--	½ mile.
Houses with several gables.....	262	18	--	3 miles.
Right edge Wetipquin woods.....	274	37	--	2¼ miles.
Chimney of house behind trees.....	302	43	--	2 miles.
Windmill.....	319	03	--	2 miles.
Stack of canning house.....	320	15	--	2 miles.
Chimney of house on Ragged Point.....	350	33	--	2¼ miles.
Windmill.....	352	57	--	3¼ miles.

GOVER.

Locality.—Northwestern shore of Nanticoke River 1¾ miles west-northwest of entrance to Wetipquin Creek and ¼ mile north of cove named Perch Haul. See Chart No. 11.)

Observed station is on a point of marsh covered with grass and water bushes, and is about 15 yards northwest from extreme end of point. A shanty stands among the bushes and small trees about 200 yards to the west-southwest. A clump of about 50 pine trees stands about ¼ mile west and another clump stands about ¼ mile northwest.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
Bivalve Church (S 21° 30' E).....	0	00	00	2¾ miles.
Tangent of land.....	35	24	--	1 mile.
Left side of opening in woods.....	72	06	--	2 miles.
Two pine trees together.....	83	07	--	¾ mile.
Center of shanty.....	98	26	--	200 yards.
Clump of pine trees.....	123	56	--	¼ mile.
Clump of pine trees.....	176	20	--	¼ mile.
Inside edge of cove.....	201	45	--	100 yards.
Clump of small pine trees.....	255	31	--	¼ mile.
Tangent to point of land.....	269	35	--	1½ miles.
Left tangent of Sandy Hill wharf.....	276	02	--	3 miles.
Large house.....	286	27	--	3¼ miles.
Left edge of pine woods near Wetipquin Creek.....	328	13	--	2 miles.

STREETT.

Locality.—Northwestern shore of Nanticoke River on point on southwest side of entrance to Jacks Creek. (See Chart No. 11.)

Observed station is on a marsh and grass point 7 yards west from its extreme end and about 4 yards from each side of point to north and south. Cement monument marking reference station is 11.89 meters west of observed station.

Marks.—Observed station is nail in pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Earle" S 45° 01' E)-----	0	00	00	1 mile.
A shanty-----	0	41	--	1 mile.
Large white house with red roof-----	27	08	--	2½ miles.
Canning-house stack at Tyaskin-----	33	42	--	1¾ miles.
Large white building-----	36	42	--	1¾ miles.
Point of marsh-----	47	33	--	100 yards.
First of four trees-----	135	01	--	½ mile.
REFERENCE STATION-----	164	39	00	11.89 meters.
Point of marsh-----	255	02	--	30 yards.
House on the other side of Jacks Creek-----	258	13	--	½ mile.
Left tangent of Sandy Hill wharf-----	309	38	--	1¼ miles.
White house-----	318	08	--	1½ miles.

EARLE.

Locality.—Southeast shore of Nanticoke River about one mile below Sandy Hill wharf. (See Chart No. 11.)

Observed station is on sand and grass land between river and pine grove, and about 80 yards back and 5 feet above high-water mark. A white oak tree about 2½ feet in diameter stands between station and river and another and larger white oak tree stands about 15 yards to the northeast. There is a shanty about 20 yards to the west and a sand beach northwest of the station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Juliet" (S 41° 05' W)-----	0	00	00	1¼ miles.
Nail in blaze in white oak tree (2½ feet in diameter)-----	88	44	30	13.98 meters.
Nail in blaze in pine tree-----	160	39	00	19.05 meters.
Nail in blaze in oak tree (2½ feet in diameter)-----	196	35	40	13.95 meters.
Nail in blaze in pine tree-----	326	01	00	15.76 meters.
Right tangent of woods on other side of Wetipquin Creek-----	358	52	--	1½ miles.

JULIET.

Locality.—Eastern shore of Nanticoke River on point on southwest side of entrance to Wetipquin Creek. (See Chart No. 11.)

Observed station is on sand and marsh point about 100 yards southwest of entrance to Wetipquin Creek. It is about 10 yards back from high-water mark and about 5 yards outside of several small pine trees. Very dense pine woods stand about 100 yards to the south of the station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Earle" (N 41° 04' E)-----	0	00	00	1¼ miles.
Nail in blaze in pine tree-----	29	41	30	4.92 meters.
Near point of roof of oyster house-----	40	05	--	300 yards.
Left edge of woods-----	64	21	--	200 yards.

Survey of Oyster Bars, Wicomico County, Md.

References—Continued.

	°	'	"	
Nail in blaze in pine tree.....	71	17	00	6.31 meters.
Nail in blaze in pine tree.....	98	20	00	6.88 meters.
Right edge of woods.....	163	52	--	200 yards.
Right tangent of Bivalve wharf.....	170	02	--	1½ miles.
Two-story white house.....	210	06	--	2½ miles.
Two-story white house with red roof.....	228	37	--	¾ mile.
Opening in woods.....	230	16	--	3 miles.
Gray house at Jacks Creek	324	00	--	1¾ miles.
Tangent of land	345	58	--	150 yards.
Tangent of land	354	49	--	150 yards.

POLE.

Locality.—Eastern shore of Nanticoke River on wharf off town of Bivalve, located about 1¼ miles northeast of Ragged Point. (See Chart No. 11.)

Marks.—Observed station is flagpole on western peak of a house on wharf at Bivalve about 300 yards from shore.

References.—None necessary.

BIVALVE CHURCH.

Locality.—Eastern shore of Nanticoke River about ¾ mile back from shore in town of Bivalve on main road leading to the steamer landing. (See Chart No. 11.)

Marks.—Observed station s center of steeple on Bivalve Methodist Church.

References.—None necessary.

RAG.

Locality.—Eastern shore of Nanticoke River on northern side Ragged Point. (See Chart No. 11.)

Observed station is on a sandy point about 25 yards back from high-water mark and 100 yards northeast from extreme end of point. A grove of pine trees stands about 50 yards to the east and two groups of pine trees about 20 and 75 yards to the northeast. Two pine trees each 15 inches in diameter and 2½ feet apart stand about 20 yards to the east of the station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
Nanticoke Church (S 1° 46' E).....	0	00	00	1½ miles.
Left end of Sandy Point.....	29	17	--	3½ miles.
Chimney on house near "Cow".....	51	48	--	2½ miles.
Large tree at left end of woods.....	130	20	--	3¼ miles.
Left one of two trees (opposite shore).....	169	56	--	3¼ miles.
Flag pole on Bivalve wharf.....	201	11	--	1¼ miles.
Smoke pipe on Bivalve wharf house.....	207	14	--	1¼ miles.
Nail in stump of limb on pine tree.....	218	35	--	32.78 meters.
Nail in blaze in double pine tree.....	258	01	--	19.66 meters.
Nail in blaze in large pine tree.....	293	26	--	43.19 meters.
Chimney on a white house.....	303	29	--	135 yards.
Windmill near large house.....	344	13	--	¾ mile.
Steeple on a barn.....	356	40	--	1 mile.
Large chimney on large flat-roof house.....	357	10	--	1 mile.

NANTICOKE CHURCH.

Locality.—Eastern shore of Nanticoke River in town of Nanticoke, about ¼ mile back from river and ¾ mile northeast of Roaring Point. (See Charts Nos. 11 and 12.)

Marks.—Observed station is center point of spire of church known as "Nanticoke Methodist Episcopal Church."

References.—None necessary.

CRAB.

Locality.—Upper end and western shore of Tangier Sound on eastern side of Bloodworth Island about $2\frac{5}{8}$ miles southeast of Sharkfin Shoal Light and about halfway between Piney Island Cove to north and Great Cove to south. (See Chart No. 12.)

Observed station is about 15 yards from high-water mark to the northeast and about 35 yards from the shore to the east. A small flat-roof crab house stands about 80 yards to the north-northeast and another crab house about twice the distance in the same direction.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (N $45^{\circ} 25'$ E)-----	0	00	00	$2\frac{5}{8}$ miles.
Left end of large white house near Stump Point.....	6	11	--	$7\frac{3}{8}$ miles.
End of roof of white house on bluff-----	31	36	--	$6\frac{1}{4}$ miles.
End of Deal Island wharf-----	53	03	--	$3\frac{3}{4}$ miles.
Large white house near red roof house-----	72	35	--	$4\frac{1}{4}$ miles.
Aspen tree near "Joshua"-----	88	06	--	$5\frac{1}{8}$ miles.
Tall pine tree-----	165	00	--	$1\frac{1}{2}$ miles.
Near end of flat-roof shanty-----	288	32	--	80 yards.
Flag pole on Brown's crab house-----	299	01	--	150 yards.

SHARKFIN SHOAL LIGHT.

Locality.—Northern end of Tangier Sound about equally distant from entrances of Hooper Strait, Fishing Bay, and Nanticoke River. (See Chart No. 12.)

Marks.—Observed station is center point of black lantern on hexagonal screw pile known as "Sharkfin Shoal Light."

References.—

"Great Shoals Light" (N $81^{\circ} 45'$ E)-----	$5\frac{5}{8}$ miles.
--	-----------------------

HEAD.

Locality.—Upper end of Tangier Sound, on southern part of peninsula known as "Bishops Head," situated between Hooper Strait and Fishing Bay. (See Chart No. 12.)

Observed station is on eastern side of marsh land about $\frac{1}{2}$ mile north of extreme southerly end of Bishops Head and about 15 yards east of two crab houses. It is about 15 yards southwest of high-water mark, behind water bushes which skirt the shore. Cement monument marking reference station is 13.41 meters west from observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S $60^{\circ} 41'$ E)-----	0	00	00	$2\frac{3}{4}$ miles.
Crab-house flagstaff-----	50	30	--	$3\frac{1}{4}$ miles.
Large pine-----	97	42	--	2 miles.
REFERENCE STATION-----	139	55	40	13.41 meters.
Near gable of $2\frac{1}{2}$ -story white house-----	140	24	--	$\frac{1}{4}$ mile.
Chimney on white house-----	156	44	--	$\frac{1}{8}$ mile.
Left side of crab house-----	166	38	--	17.31 meters.
Right side of crab house-----	199	54	--	16.11 meters.
Chimney on yellow house-----	208	28	--	$1\frac{1}{2}$ miles.
Chimney on end of white house-----	238	53	--	3 miles.
Right side of Nanticoke Point woods-----	326	56	--	$7\frac{1}{2}$ miles.

FROG.

Locality.—West shore of mouth of Nanticoke River, on the southeasterly point of Clay Island, known as "Frog Point." (See Chart No. 12.)

Observed station is on a marsh point about 25 yards back from extreme end of point, 20 yards from the east side and 25 yards from the west side. Water bushes abound back of station. There are no permanent reference objects near station. Cement monument marking reference station is 13.10 meters north of observed station.

Marks.—Observed station is nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 41° 25' W)-----	0	00	00	3½ miles.
Left tangent of Clay Island-----	35	17	--	1¼ miles.
REFERENCE STATION-----	141	45	50	13.10 meters.
Right tangent of Sandy Point-----	177	41	--	¾ mile.
Chimney on white house with black roof....	179	12	--	2½ miles.
Chimney on near end of large red-roof white house-----	183	02	--	2½ miles.
Stack of canning house-----	184	36	--	2½ miles.
Land end of Nanticoke wharf-----	184	36	--	2½ miles.
End of Nanticoke wharf house-----	186	00	--	2¼ miles.
Chimney on ell end of main part of large red-roof white house-----	211	27	--	2¼ miles.
Right tangent of Nanticoke Point woods....	238	44	--	2¼ miles.
Large square chimney on white house (Dames Quarter)-----	264	17	--	4 miles.
Rock Creek poplar tree-----	284	17	--	3½ miles.
Flagstaff on Deal Island wharf-----	322	09	--	4¾ miles.

ROAR.

Locality.—Eastern shore of Nanticoke River on point of land known as Roaring Point, and about ¼ mile north from outer end of Roaring Point wharf. (See Chart No. 12.)

Observed station is 30 yards to the east of the extreme end of the point and on a sandy knoll about 5 feet above high-water mark. It is about 20 yards back from high-water mark on the north side and about 40 yards back from high-water mark on south side of the point. Pine woods stand about 150 yards inshore from station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Frog" (S 39° 02' W)-----	0	00	00	2½ miles.
Two shanties-----	19	17	--	2 miles.
One shanty-----	30	20	--	1¾ miles.
A shanty-----	71	32	--	1¼ miles.
White shanty-----	98	53	--	1¾ miles.
Barn steeple-----	117	41	--	4½ miles.
White shanty behind "Okay"-----	121	25	--	2¾ miles.
Red roof house-----	144	42	--	7½ miles.
Twin trees on Ragged Point-----	159	30	--	2 miles.
Chimney on white house-----	175	23	--	1½ miles.
Windmill-----	184	04	--	1 mile.
Gambrel roof house-----	184	32	--	1 mile.
White canning house stack-----	195	11	--	½ mile.
Land end of wharf-----	271	58	--	¼ mile.
Large house-----	293	38	--	1½ miles.
Right tangent of Nanticoke Point woods....	297	22	--	2½ miles.
Right tangent of Nanticoke wharf-----	304	52	--	¾ mile.
Left tangent of Sandy Point-----	359	51	--	1¾ miles.

NANTI.

Locality.—Eastern side of entrance to Nanticoke River about $\frac{1}{4}$ mile northwest of Nanticoke Point. (See Chart No. 12.)

Observed station is on grassy land about 2 feet above and 20 yards back from high-water mark. It is about midway between edge of woods on Nanticoke Point and unpainted house near poplars $\frac{1}{4}$ mile to the north.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 65° 14' W)-----	0	00	00	5 miles.
Tangent of Sandy Point-----	51	33	--	2 $\frac{1}{4}$ miles.
Left end of Nanticoke wharf-----	89	45	--	2 miles.
Near chimney of red roof house-----	96	51	--	$\frac{3}{4}$ mile.
Chimney of unpainted house-----	101	08	--	$\frac{1}{4}$ mile.
Near chimney of house nearest woods-----	116	56	--	$\frac{1}{4}$ mile.
Tree high above woods-----	119	53	--	2 $\frac{1}{4}$ miles.
Right end of heavy woods-----	134	03	--	1 $\frac{1}{4}$ miles.
Right end of scant woods-----	147	11	--	$\frac{3}{4}$ mile.
Wild cherry tree-----	178	24	--	50 yards.
Left end of woods-----	227	46	--	$\frac{1}{4}$ mile.
Right end of woods-----	269	45	--	$\frac{1}{4}$ mile.
Poplar tree Dames Quarter-----	307	28	--	2 $\frac{3}{4}$ miles.
Tangent of Haines Point-----	330	55	--	4 $\frac{1}{2}$ miles.

WHITE.

Locality.—Eastern shore of entrance to Nanticoke River on western part of Nanticoke Point. (See Chart No. 12.)

Observed station is on a sand and grass point about 2 feet above high-water mark, 3 yards from the west side, 15 yards from the south end, and 20 yards from southeast side. Dense pine woods stand about 100 yards to the northwest, open marsh to the northeast, and a clump of about a dozen pine trees in marsh about $\frac{3}{4}$ mile to the northeast. There is a cove about 40 yards east of the station and another point of land about 100 yards to the southeast. Cement monument marking reference station is 16.63 meters north of observed station.

Marks.—Observed station is a nail in a pine stub about 6 inches below surface or ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Great Shoals Light" (S 44° 16' E)-----	0	00	00	1 $\frac{1}{4}$ miles.
Poplar tree at Dames Quarter-----	65	08	--	2 $\frac{1}{2}$ miles.
Tangent of Hall Point-----	86	06	--	3 $\frac{1}{4}$ miles.
Tangent of Sandy Point-----	164	17	--	3 miles.
Left end of pine woods-----	172	27	--	100 yards.
Right end of pine woods-----	213	21	--	150 yards.
REFERENCE STATION-----	227	29	00	16.63 meters.
Largest tree in clump of about 12 pines-----	247	23	--	$\frac{3}{8}$ mile.
Chimney on cabin on Ellis Point-----	279	05	--	2 miles.
White house-----	311	54	--	$\frac{1}{2}$ mile.
Point of land-----	335	02	--	100 yards.

ELLA.

Locality.—North shore of Wicomico River on point at east side of entrance to Ellis Bay. (See Chart No. 12.)

Observed station is on a marsh point about 1 foot above high-water mark. It is about 10 yards back from the shore to the west, 20 yards back from the shore to the south, and 20 yards back from the shore to the north. No permanent reference objects near station.

Survey of Oyster Bars, Wicomico County, Md.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"Great Shoals Light" (S 9° 49' W)-----	0	00	00	2 miles.
Tangent of land on Mollies Point-----	5	14	--	1 mile.
Watch house-----	26	10	--	1½ mile.
Left of woods on Nanticoke Point-----	44	23	--	1¼ miles.
Right of woods on Nanticoke Point-----	52	33	--	1¼ miles.
Chimney of white house-----	135	45	--	2 miles.
Chimney of gray house-----	142	43	--	2 miles.
Chimney of white house-----	249	27	--	200 yards.
Mount Vernon Church-----	257	58	--	2¼ miles.
Chimney on middle of white house-----	274	28	--	1¼ miles.
Chimney on cream and brown house-----	290	49	--	1 mile.
Chimney on brown house-----	291	03	--	1 mile.
Smoke pipe of watch house-----	306	57	--	1 mile.

HOLLAND.

Locality.—North shore of Wicomico River on Holland Point about 1¼ miles west of Mount Vernon Church, and 1¼ miles east of Ellis Bay. (See Chart No. 12.)

Observed station is on a marsh point about 20 yards north of high-water mark on its extreme end and about 100 yards west of a creek. A small cabin stands about 200 yards to the west.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"Wind" (S 28° 35' W)-----	0	00	00	1¼ miles.
Great Shoals Light-----	4	34	--	2¾ miles.
Tangent of Mollies Point-----	18	39	--	2 miles.
Left tangent of woods on Nanticoke Point-----	34	33	--	2¾ miles.
Right tangent of woods on Nanticoke Point-----	39	28	--	2¾ miles.
Chimney of house near Ellis Bay-----	46	19	--	1¼ miles.
Chimney of cabin-----	56	14	--	200 yards.
Chimney on left end of large red roof building--	91	56	--	3 miles.
Large chimney on white house-----	188	31	--	1¼ miles.
Chimney of slate-colored house-----	230	43	--	1¼ miles.
Chimney on middle of light-blue house-----	240	48	--	1 mile.
Chimney on 2½-story light-green house-----	266	41	--	¾ mile.
Right chimney on white house-----	317	29	--	½ mile.

CHILD.

Locality.—North shore of Wicomico River about ¾ mile north of Mount Vernon Church. (See Chart No. 12.)

Observed station is on marsh land about 2 feet above and 15 yards back from high-water mark. There is an old wharf about 300 yards to the east and at a point about 100 yards to the north, two creeks join and form a single creek about 20 feet wide which flows into the river at a point about 15 yards west of observed station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"Mount Vernon Church" (S 10° 15' E)-----	0	00	00	¾ mile.
Chimney on white house in woods on opposite shore-----	3	23	--	¾ mile.
Chimney on white house on sand bluff on opposite shore-----	15	32	--	5⁄8 mile.
Smoke pipe on large white house-----	19	55	--	¾ mile.
Chimney on brown house-----	48	14	--	1½ miles.

References—Continued.

	°	'	"	
Great Shoals Light.....	49	33	--	3¼ miles.
Tangent of Holland Point.....	62	44	--	1¼ miles.
Fork of creek.....	183	08	--	100 yards.
Chimney of large house.....	206	39	--	2 miles.
Chimney of another large house.....	238	43	--	¾ mile.
Mount Vernon wharf smoke pipe.....	293	12	--	1½ miles.
Large white house in woods.....	324	03	--	¾ mile.
Cream-colored house in woods.....	345	47	--	½ mile.

. CREEK.

Locality.—North shore of Wicomico River about ¾ mile northwest of Mount Vernon wharf and about 1½ miles northeast of Mount Vernon Church. (See Chart No. 12.)

Observed station is on a marsh grass and sand point making out to the south and about 10 yards from the high-water mark of each of the three sides of the point. About 10 yards west of observed station is the mouth of a creek or drain 10 feet wide which runs only a short distance inland. There are several unpainted houses within 200 yards of observed station and a lone pear tree stands about 200 yards to the north. There is a cultivated field about 150 yards back of station which extends to edge of woods ¼ mile distant.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Mount Vernon Church" (S 30° 39' W).....	0	00	00	1½ miles.
Chimney on light-blue house with red blinds..	13	46	--	1¼ miles.
Lone tree.....	72	59	--	1 mile.
Chimney of old unpainted house.....	108	18	--	300 yards.
Chimney of light-green trimmed house.....	135	15	--	200 yards.
Pear tree.....	159	48	--	200 yards.
Left chimney of cream-colored house.....	218	06	--	300 yards.
Tangent of cove.....	224	--	--	30 yards.
Smoke pipe on Mount Vernon wharf.....	282	34	--	¾ mile.
Chimney outside yellow house.....	312	04	--	¾ mile.
Chimney on slate-colored house.....	352	57	--	¾ mile.

END.

Locality.—North shore of Wicomico River opposite Mount Vernon wharf. (See Chart No. 12.)

Observed station is on marsh land about 3 feet above and about 100 yards north of high-water mark in river and about 75 yards to the northwest of a large creek which runs about 2 miles inland. Water bushes skirt shore around station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Jones" (S 60° 33' W).....	0	00	00	¾ mile.
Chimney on white house.....	7	24	--	1 mile.
Tangent of land.....	12	28	--	1 mile.
Near chimney of cream-colored house.....	68	25	--	½ mile.
Cupola on red barn.....	155	21	--	¾ mile.
Old-style windmill.....	163	26	--	¾ mile.
Chimney of Whitehaven Hotel.....	171	09	--	1¼ miles.
Webster's canning house.....	252	28	--	½ mile.
Right-hand chimney on gray house.....	273	42	--	½ mile.
Left side of Mount Vernon wharf.....	294	13	--	¾ mile.
Stack of Dashiell's canning house.....	304	52	--	¾ mile.
Middle attic window of white house.....	328	54	--	½ mile.
Chimney outside of yellow house.....	352	12	--	½ mile.

WALNUT.

Locality.—South shore of Wicomico River about 175 yards east of Mount Vernon wharf. (See Chart No. 12.)

Observed station is on marsh land about 17 feet from shore and 50 yards west of a small creek. Several large walnut and locust trees stand about 250 yards south of station and 2 houses and 2 sheds about 250 yards to the southwest.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Jones" (S 83° 49' W)-----	0	00	00	¾ mile.
Right side of Mount Vernon wharf house-----	17	18	--	175 yards.
Chimney outside of white house-----	46	52	--	1 mile.
Left chimney of gabled house-----	53	47	--	1 mile.
Old-style windmill-----	121	00	--	½ mile.
Left end of roof of Whitehaven wharf-----	136	18	--	1 ½ miles.
Chimney on Whitehaven Hotel-----	136	40	--	1 ½ miles.
Opening between pair of pine trees near White-				
haven-----	140	--	--	1 ½ miles.
Stack of Webster's canning house-----	187	38	--	300 yards.
Opening between two walnut trees-----	274	--	--	200 yards.
Chimney of Whitlock's house-----	307	37	--	250 yards.
Stack of Dashiell's canning house-----	352	23	--	400 yards.

JONES.

Locality.—South shore of Wicomico River about ¼ mile west of Mount Vernon wharf. (See Chart No. 12.)

Observed station is on a knoll about 25 feet above and 30 yards to south of high-water mark, and about 200 yards to the east of a cove. The knoll on which the station is located is the highest point on the shore in this locality. Several small cabins stand to the northward about 25 yards, and a large lone cedar tree about 35 yards to the southwest.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Ivee" (S 78° 54' W)-----	0	00	00	¾ mile.
Large square chimney on four-gable house-----	10	05	--	¼ mile.
Cedar tree-----	11	22	--	25 yards.
Tangent of point of land-----	34	54	--	½ mile.
Nail in blaze in cedar tree-----	62	26	--	20. 30 meters.
Chimney on light-green house on opposite				
shore-----	102	33	--	¾ mile.
White cupola in Whitehaven-----	148	53	--	2 ¼ miles.
Old-style windmill-----	153	31	--	1 ½ miles.
Whitehaven Hotel chimney-----	155	48	--	2 ¼ miles.
Large chimney on yellow house-----	178	37	--	¼ mile.
Chimney on end of brown house-----	216	37	--	½ mile.
Chimney on white house-----	266	42	--	¼ mile.
Weeping willow-----	307	55	--	¼ mile.
Nail in blaze in cedar tree-----	318	30	--	31. 10 meters.

IVEE.

Locality.—Southeast shore of Wicomico River about ¼ mile northwest of Mount Vernon Church. (See Chart No. 12.)

Observed station is on grass land about 1 foot above and 10 feet back from high-water mark. A small cove makes in about 100 yards east of station. A small lone pine stands about 110 yards to

the east-southeast, and a sand bluff with pine trees about 100 yards to the southwest. Beyond the woods along the beach is a bluff 15 feet high upon which are several houses.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Mount Vernon Church" (S 22° 37' E)-----	0	00	00	3/8 mile.
White house chimney-----	55	35	--	1/4 mile.
Chimney on end of white house-----	209	55	--	2 miles.
Chimney of green-trimmed house near "Creek"-----	245	28	--	1 1/4 miles.
Old-style windmill-----	264	47	--	2 1/8 miles.
Slate-colored house-----	276	22	--	1/2 mile.
Chimney on middle of white house beyond woods-----	297	11	--	1 mile.
Lone pine tree-----	317	53	--	110 yards.

MOUNT VERNON CHURCH.

Locality.—Southeast side of Wicomico River about 3/8 mile back from the shore 1 1/2 miles south-west of Mount Vernon wharf. (See Chart No. 12.)

Observed station is on main road in Mount Vernon and is situated on the highest point in the vicinity.

Marks.—Observed station is center of steeple of Mount Vernon Methodist Church.

References.—None necessary.

BALL.

Locality.—Southeast shore of Wicomico River on a point of land about 1 mile northeast of Wingate Point. (See Chart No. 12.)

Observed station is on a sand and grass point making out about 100 yards west of a sand bluff. A small creek empties into the river about 10 yards to the east, and three poplars stand about 100 yards to the south. The extreme northern end of the point is about 35 yards from station and the western side is about 10 yards.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Holland" N 20° 03' W)-----	0	00	00	1/2 mile.
Middle one of five pines-----	107	09	--	100 yards.
Chimney on John Withlock's house-----	137	57	--	100 yards.
Left end of pine woods-----	145	33	--	1/2 mile.
Right end of pine woods-----	165	04	--	1/2 mile.
Chimney on white house-----	183	32	--	1/4 mile.
Third poplar-----	209	04	--	100 yards.
Chimney of brown house-----	248	27	--	1/2 mile.

WIND.

Locality.—Southeast shore of Wicomico River about 1/4 mile north of southern end of Wingate Point. (See Chart No. 12.)

Observed station is about 30 yards from high-water mark of Wicomico River on the north side and 20 yards from the west side. An oyster watchhouse stands about 100 yards to the east of the station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Great Shoals Light" S 36° 29' W)-----	0	00	00	1 1/2 miles.
Tangent of Mollies Point-----	33	35	--	1 mile.
Left end of woods-----	46	12	--	1 3/4 miles.
Right end of woods-----	51	45	--	1 3/4 miles.
Tangent of Ellis Point-----	102	47	--	1 mile.
White house in woods-----	157	19	--	3 miles.
Smoke pipe on watchhouse-----	185	49	--	100 yards.
Chimney of brown house-----	203	38	--	1/2 mile.

*Survey of Oyster Bars, Wicomico County, Md.**References—Continued.*

	°	'	"	
Chimney of cream-colored house with brown trimmings.....	215	34	00	1½ mile.
Watchhouse.....	308	41	--	¼ mile.
Chimney on 2½-story house.....	342	18	--	3 miles.
Chimney on end of white house Dames				
Quarter.....	350	57	--	2½ miles.

LITTLE.

Locality.—Southern shore of Monie Bay on second prominent point of marsh about ¼ mile to the west entrance to Little Monie Creek. (See Chart No. 12.)

Observed station is on a marsh point covered with water bushes and reeds. It is about 1 foot above high-water mark, 7 yards from the west side, ¼ yards from the east side, and about 50 yards from extreme end of point. No permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Great Shoals Light" (S 83° 43' W).....	0	00	00	2¼ miles.
Left side of woods on Nanticoke Point.....	19	34	--	3¼ miles.
Right side of woods on Nanticoke Point.....	22	24	--	3½ miles.
Tangent of Wingate Point.....	34	39	--	1½ miles.
Chimney on red roof white house.....	60	13	--	1½ miles.
Chimney on near end of white house with brown trimmings.....	62	02	--	1½ miles.
Chimney on red roof white house with green blinds.....	62	43	--	1½ miles.
Left chimney of yellow house trimmed white...	79	52	--	1½ miles.
Middle of woods.....	80	--	--	1¼ miles.
Large brown house.....	93	55	--	1¾ miles.
Mount Vernon Church.....	102	42	--	1¾ miles.
Tangent of point of land.....	165	47	--	¼ mile.
Tangent of point of land.....	320	16	--	.75 yards.
Tangent of land.....	346	47	--	3 miles.

DOVE.

Locality.—South shore of Monie Bay and about ¼ mile east of entrance to Pigeon Creek. (See Chart No. 12.)

Observed station is on marsh land about 10 yards back from high-water mark not far from water bushes which stand to the east. Cement monument marking reference station is 13.98 meters southeast from observed station. No permanent reference objects near station.

Marks.—Observed station is a nail in pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Great Shoals Light" (N 57° 41' W).....	0	00	00	1¼ miles.
Left side of Nanticoke Point woods.....	6	56	--	2¾ miles.
Left side of Roaring Point heavy woods. . .	19	29	--	5 miles.
High lone pine showing above woods.....	23	36	--	5 miles.
Tangent of Wingate Point.....	52	52	--	2 miles.
Chimney of red roof house.....	67	39	--	2 miles.
Chimney on yellow house with red gable roof.....	84	12	--	3 miles.
Mount Vernon Church.....	86	37	--	3¼ miles.
Tangent of land.....	106	38	--	300 yards.
REFERENCE STATION.....	202	35	50	13.98 meters.
Chimney of white house with dark red trimmings.....	245	21	--	1¼ miles.

GREAT SHOALS LIGHT.

Locality.—Middle of entrances to Monie Bay and Wicomico River about halfway between Long Point to the south and Mollies Point to the north. (See Chart No. 12.)

Marks.—Observed station is center of black lantern on square screw pile structure known as "Great Shoals Light."

References.—

"Sharkfin Shoal Light" (S 81° 50' W) ----- 5 $\frac{7}{8}$ miles.

SHORT.

Locality.—Southern shore of entrances to Monie Bay and Wicomico River on Long Point and about 1 mile south-southwest from Great Shoals Light. (See Chart No. 12.)

Observed station is on a sandy knoll on eastern side of entrance to Dames Quarter Creek about 15 feet back from high-water mark on the north side and about 30 feet from east side of point. It is on the highest part of the knoll which is about 5 feet above high-water mark.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Sharkfin Shoal Light" (S 89° 03' W) ----	0	00	00	5 $\frac{3}{8}$ miles.
Tile pipe in cement ("Long" 1901) -----	23	57	45	63.703 meters.
Nanticoke wharf -----	67	57	--	4 $\frac{1}{8}$ miles.
Left side of Nanticoke woods -----	69	13	--	2 miles.
Yellow house with red blinds -----	74	53	--	3 $\frac{1}{2}$ miles.
Left tangent of Wingate Point -----	124	13	--	2 $\frac{3}{8}$ miles.
Chimney on red roof white house -----	132	39	--	3 miles.
Near chimney of yellow house -----	136	40	--	3 miles.
Chimney on red trimmed house -----	212	49	--	2 miles.
Left tree at Dames Quarter -----	260	37	--	$\frac{1}{4}$ mile.
Chimney on white barn -----	279	45	--	300 yards.
Left chimney on white house -----	320	05	--	200 yards.
Chimney on yellow house -----	341	35	--	200 yards.

ROOM.

Locality.—Upper end and eastern shore of Tangier Sound on Halls Point. (See Chart No. 12.)

Observed station is on a bluff 15 feet high about 5 yards back from its edge. It is about 25 yards east of a clump of mulberry trees and about 15 yards north-northwest of a barn. Locust and mulberry trees stand all about station and locust bushes along the edge of the bluff. A wagon trail runs parallel to the shore about 15 yards back of station. Cement monument marking reference station is 21.45 meters south-southwest of observed station and almost in line with a large mulberry tree.

Marks.—Observed station is nail in center of stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Sharkfin Shoal Light" (N 70° 00' W) ----	0	00	00	2 $\frac{1}{2}$ miles.
Gable on near side of red roof on white house on Bishops Head -----	3	01	--	5 $\frac{1}{2}$ miles.
Near end of roof of large 2 $\frac{1}{2}$ -story house --	12	53	--	7 $\frac{1}{4}$ miles.
Left tangent of Clay Island -----	39	18	--	3 $\frac{1}{2}$ miles.
Left side of Sandy Point woods -----	70	08	--	4 miles.
Roaring Point wharf -----	85	22	--	5 miles.
Near chimney on end of large red roof white house -----	94	36	--	4 $\frac{1}{4}$ miles.
Right side of Nanticoke woods -----	110	28	--	3 $\frac{3}{4}$ miles.
Mount Vernon Church -----	127	18	--	7 miles.
Near corner of barn -----	137	06	--	15.96 meters.

*Survey of Oyster Bars, Wicomico County, Md.**References—Continued.*

	°	'	"	
Right-hand corner of barn.....	152	08	--	18. 11 meters.
REFERENCE STATION.....	268	30	00	21. 45 meters.
Large cedar tree.....	276	30	--	100 yards.
Two-inch iron pipe.....	279	38	30	9. 21 meters.

HAINES.

Locality.—Upper end and eastern shore of Tangier Sound on Haines Point, about $\frac{5}{8}$ mile north of Deal Island wharf. (See Chart No. 12.)

Observed station is on sand and grass point about 20 yards back and 5 feet above high-water mark. Locust and water bushes stand about 20 yards to the north and the left edge of this clump is about on line with Sharkfin Shoal Light. A barbwire fence runs 3 yards east of station. Cement monument marking reference station is 9.64 meters east of observed station.

Marks.—Observed station is nail in pine stub in center of a drain tile with top broken off below surface. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (N 45° 58' W).....	0	00	00	2 $\frac{1}{2}$ miles.
Left of bushes.....	39	57	--	20 yards.
Left of Sandy Point woods.....	53	38	--	4 $\frac{3}{4}$ miles.
Chimney of 2 $\frac{1}{4}$ -story white house trimmed with red.....	75	04	--	$\frac{1}{2}$ mile.
Chimney of unpainted house.....	85	49	--	350 yards.
Chimney on end of red cottage trimmed white.....	99	00	--	$\frac{3}{4}$ mile.
REFERENCE STATION.....	123	40	40	9. 64 meters.
Pine tree.....	148	37	30	2. 14 meters.
Large square chimney on red house.....	152	49	--	400 yards.
Right one of 5 large pines.....	184	40	--	300 yards.
Half way between chimneys on store on Deal Island.....	213	08	--	$\frac{3}{4}$ mile.
Deal Island Church.....	217	00	--	1 $\frac{1}{2}$ miles.
Black gum tree.....	223	49	--	6. 70 meters.
Right end of Deal Island wharf.....	234	10	--	$\frac{1}{2}$ mile.
Hooper Straits Light.....	343	34	--	7 $\frac{1}{2}$ miles.

DEAL ISLAND CHURCH.

Locality.—Deal Island on main road about $\frac{1}{4}$ mile from the shore and about $\frac{3}{4}$ mile south of Laws Thoroughfare. (See Chart No. 12.)

Marks.—Observed station is center of steeple on Deal Island Methodist Church.

References.—None necessary.

BAR.

Locality.—Eastern shore of Tangier Sound on western side of Deal Island, about 1 mile northwest of entrance to Lower Thoroughfare and $\frac{1}{2}$ mile south of Middle Creek. (See Chart No. 12.)

Observed station is about 10 yards east of high-water mark on sand and grass land back of sandy beach. The first of many tree stumps which are submerged at high water commence about 100 yards to the north and cat-tails grow abundantly back of station. Cement monument marking reference station is 6.09 meters east of observed station.

Marks.—Observed station is a nail in pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (N 19° 40' W).....	0	00	00	4 $\frac{1}{2}$ miles.
Tangent of Haines Point.....	27	29	--	2 $\frac{1}{2}$ miles.

References—Continued.

	°	'	"	
Flag pole on large building on Deal Island wharf.....	28	45	--	2 miles.
Middle chimney of large gray building.....	37	41	--	1 mile.
Chimney on white house.....	59	54	--	400 yards.
Middle chimney on red roof white house.....	79	51	--	$\frac{3}{8}$ mile.
REFERENCE STATION.....	107	10	00	6.09 meters.
Chimney on white house.....	118	43	--	400 yards.
Chimney on dark gray house.....	161	57	--	300 yards.
Right chimney on white four-gabled house with red roof.....	176	39	--	$\frac{1}{2}$ mile.

BOUNDARIES OF OYSTER BARS.

EXPLANATION OF DESCRIPTION OF BOUNDARIES.

The oyster bars of Wicomico County are 15 in number, and their total area, as marked out by buoys placed by the hydrographic engineer of the Commission, is 1,638 acres. As provided by law, the boundaries of the oyster bars are all straight lines, but they inclose areas of all shapes from triangles to complicated eight-sided figures, and of all sizes from 1,123 acres to 4 acres.^a The sides vary in length from 120 to 3,800 yards, and in some cases the corners of the boundaries are practically at the triangulation stations from which they are located, while in other instances they are over 7,500 yards from the landmarks most available for the purpose of fixing their positions.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made and the magnitude of the work with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the Commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and future.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in the county.

At the top of each tabular form is given the legal name of the oyster bar to be described, its general locality, and the serial number of the "Charts of Oyster Bars" of Maryland on which its legal boundaries are shown.

The first column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar; but where a corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars only the number of the corner of the oyster bar being described in the table is given in this column.

The second and third columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the

^a For similar statistics for other counties that have been surveyed, see Appendix C of this publication.

Commission as the primary technical definition of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the Survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural causes or by acts of vandals desiring to defeat the purposes of the oyster laws of Maryland.

The fourth and fifth columns, under the general heading of "True bearing"^a and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

The sixth column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

The seventh and last column, under the heading of "U. S. C. & G. S. triangulation station,"^b gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication, under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars. One, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

^a The mean magnetic variation for Wicomico County is 5° 45' west of north (1908), and is increasing at the rate of 3' yearly.

^b Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington.

(1) *Triangulation*.—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant, the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "Upper 'Stake' bar, which is the first one described in this publication, and assume that "Corner No. 3," is to be examined as to its position. The angle between the two landmarks "Juliet" and "Earle" as determined from right to left from the forward bearings from this corner is $92^{\circ} 57'$ and the angle between "Earle" and "Streett" is $66^{\circ} 51'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the

protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant then the other until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic locations of points are attained; in fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the Commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State fishery force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer takes compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,^a and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks for which the bearings are published have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used by getting their bearings directly from the chart by parallel rulers or a protractor and then applying them in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fourth column of the tables opposite the "corner" in question, and the direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

^a The mean magnetic variation for Wicomico County is 5° 45' west of north (1908) and is increasing at the rate of 3' yearly.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit, and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

UPPER STAKE.

(Nanticoke River—Chart No. 11.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 20 06.36	75 52 59.76	S 0 01 E	N 0 01 W	811	Juliet.
			N 59 07 E	S 59 08 W	1718	Earle.
			N 3 51 E	S 3 51 W	2209	Streett.
2	38 20 08.36	75 53 06.16	S 11 10 E	N 11 10 W	895	Juliet.
			N 63 45 E	S 63 46 W	1834	Earle.
			N 8 28 E	S 8 28 W	2160	Streett.
3	38 20 22.41	75 53 07.20	S 8 27 E	N 8 27 W	1366	Juliet.
			N 78 36 E	S 78 36 W	1706	Earle.
			N 11 45 E	S 11 45 W	1703	Streett.
4	38 20 19.59	75 52 32.41	N 59 59 E	S 59 59 W	864	Earle.
			N 78 39 W	S 78 40 E	3169	Gover.
			S 29 56 W	N 29 56 E	1449	Juliet.

WETIPQUIN.

(Nanticoke River—Chart No. 11.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
	° ' "	° ' "	° ' "	° ' "		
1	38 19 47.59	75 53 16.03	S 67 52 E	N 67 53 W	479	Juliet.
			N 51 35 E	S 51 36 W	2433	Earle.
			N 48 52 W	S 48 52 E	2587	Gover.
2	38 20 01.90	75 53 21.70	S 41 37 W	N 41 37 E	883	Juliet.
			N 63 25 E	S 63 26 W	2300	Earle.
			N 55 51 W	S 55 52 E	2173	Gover
3	38 20 08.36	75 53 06.16	S 11 10 E	N 11 10 W	895	Juliet.
			N 63 45 E	S 63 46 W	1834	Earle.
			N 8 28 E	S 8 28 W	2160	Streett.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SAND LUMP.

(Nanticoke River—Chart No. 11.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 45.20	75 53 49.80	N 34 40 E	S 34 40 W	2342	Juliet.
			N 63 18 W	S 63 19 E	2780	Ar.
			S 10 25 W	N 10 25 E	536	Pole.
2	38 18 52.18	75 53 47.54	N 36 57 E	S 36 58 W	2116	Juliet.
			N 68 16 W	S 68 17 E	2739	Ar.
			S 11 36 E	N 11 36 W	779	Pole.
3	38 18 48.82	75 53 42.02	N 31 57 E	S 31 58 W	2127	Juliet.
			N 67 16 W	S 67 17 E	2918	Ar.
			S 25 04 W	N 25 04 E	717	Pole.

HICKORY NUT.

(Nanticoke River—Chart No. 11.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 35.22	75 53 50.58	N 30 52 E	S 30 53 W	2637	Juliet.
			N 57 14 W	S 57 14 E	2930	Ar.
			S 21 47 W	N 21 47 E	206	Pole.
2	38 18 38.40	75 54 08.15	S 52 39 E	N 52 39 W	491	Pole.
			S 40 10 E	N 40 10 W	2821	Juliet.
			N 53 29 W	S 53 29 E	2485	Ar.
3	38 18 45.20	75 53 49.80	N 34 40 E	S 34 40 W	2342	Juliet.
			N 63 18 W	S 63 19 E	2780	Ar.
			S 10 25 W	N 10 25 E	536	Pole.

OLD WOMANS PATCH.

(Nanticoke River—Chart No. 11.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 21.60	75 54 11.80	N 42 53 W	S 42 54 E	2792	Ar.
			S 83 47 W	N 83 46 E	3241	Okay.
			S 15 20 W	N 15 20 E	1655	Rag.
2	38 18 29.24	75 54 16.24	N 44 54 W	S 44 55 E	2524	Ar.
			S 78 55 W	N 78 54 E	3164	Okay.
			S 9 47 W	N 9 47 E	1880	Rag.
3	38 18 31.58	75 54 06.00	N 50 14 W	S 50 15 E	2672	Ar.
			S 78 30 W	N 78 28 E	3446	Okay.
			S 17 02 W	N 17 01 E	2020	Rag.

Survey of Oyster Bars, Wicomico County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CEDAR SHOAL.

(Nanticoke River—Chart No. 11.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 09.96	75 54 12.74	N 37 34 W	S 37 35 E	3075	Ar.
			N 89 15 W	S 89 16 E	3197	Okay.
			S 18 56 W	N 18 56 E	1272	Rag.
2	38 18 12.02	75 54 28.56	N 31 34 W	S 31 36 E	2779	Ar.
			S 89 25 W	N 89 24 E	2778	Okay.
			S 0 22 E	N 0 22 W	1272	Rag.
3	38 18 24.37	75 54 31.60	N 35 09 W	S 35 09 E	2387	Ar.
			S 80 38 W	N 80 37 E	2733	Okay.
			S 3 01 E	N 3 00 W	1691	Rag.
4	38 18 27.58	75 54 20.33	N 42 14 W	S 42 14 E	2490	Ar.
			S 79 33 W	N 79 32 E	3047	Okay.
			S 6 41 W	N 6 41 E	1809	Rag.

LONG SHOAL.

(Nanticoke River—Chart No. 11.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 17.84	75 54 55.96	N 18 30 W	S 18 30 E	2290	Ar.
			S 83 45 W	N 83 44 E	2061	Okay.
			S 26 38 E	N 26 37 W	1643	Rag.
2	38 18 27.04	75 54 54.42	N 22 25 W	S 22 25 E	2013	Ar.
			S 75 37 W	N 75 37 E	2152	Okay.
			S 21 21 E	N 21 21 W	1908	Rag.
3	38 18 26.22	75 54 37.60	N 32 44 W	S 32 45 E	2246	Ar.
			S 78 42 W	N 78 41 E	2587	Okay.
			S 8 04 E	N 8 04 W	1768	Rag.

CHERRY TREE.

(Nanticoke River—Chart No. 11.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 18 06.21	75 54 38.20	N 25 03 W	S 25 04 E	2830	Ar.
			N 86 11 W	S 86 12 E	2526	Okay.
			S 13 47 E	N 13 47 W	1108	Rag.
2	38 18 13.16	75 54 44.72	N 23 46 W	S 23 46 E	2545	Ar.
			S 88, 23 W	N 88 22 E	2349	Okay.
			S 18 27 E	N 18 27 W	1381	Rag.
3	38 18 15.00	75 54 33.76	N 30 09 W	S 30 09 E	2621	Ar.
			S 87 13 W	N 87 12 E	2642	Okay.
			S 6 03 E	N 6 03 W	1387	Rag.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WILSON SHOALS.

(Lower Nanticoke River—Chart No. 11.)

Corner of bar	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	38	17	04.58	75	55	15.02	S 36 46 E	N 36 44 W	2221	Nanticoke Church.
							N 51 08 E	S 51 08 W	1597	Rag.
							N 34 29 W	S 34 30 E	2724	Okay.
2	38	17	06.76	75	55	27.60	S 41 55 E	N 41 55 W	2490	Nanticoke Church.
							N 59 31 E	S 59 32 W	1830	Rag.
							N 29 05 W	S 29 05 E	2486	Okay.
3	38	17	55.16	75	55	18.02	N 69 44 W	S 69 44 E	1559	Okay.
							S 2 42 E	N 2 42 W	4131	Roar.
							S 61 59 E	N 61 58 W	1498	Rag.
4	38	18	03.50	75	54	52.84	N 16 57 W	S 16 58 E	2776	Ar.
							N 83 04 W	S 83 05 E	2148	Okay.
							S 33 33 E	N 33 33 W	1182	Rag.
5	38	17	44.10	75	54	50.18	S 60 25 E	N 60 24 W	670	Rag.
							N 44 31 E	S 44 32 W	2150	Pole.
							N 67 28 W	S 67 29 E	2384	Okay.

ROARING POINT EAST.

(Lower Nanticoke River—Chart No. 12.)

	°	'	"	°	'	"	°	'	Yards.	
1	38	15	37.80	75	55	33.62	S 34 23 E	N 34 22 W	4041	Nanti.
							N 50 18 E	S 50 19 W	791	Roar.
							N 65 17 W	S 65 18 E	1942	Cow.
2	38	15	46.36	75	55	49.20	N 78 01 E	S 78 02 W	1047	Roar.
							N 30 35 E	S 30 34 W	4228	Rag.
							N 68 50 W	S 68 50 E	1448	Cow.
3	38	16	07.78	75	55	43.22	S 82 29 W	N 82 28 E	1522	Cow.
							S 59 42 E	N 59 42 W	1002	Roar.
							N 86 14 E	S 86 15 W	2083	Nanticoke Church.

Survey of Oyster Bars, Wicomico County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MIDDLEGROUND.

(Mouth Nanticoke River—Chart No. 12.)

Corner of bar	Latitude	Longitude	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
1	38 12 26.22	75 55 40.38	N 79 30 E S 29 24 W S 83 42 W	S 79 32 W S 29 25 E N 83 39 E	4697 4058 5699	Great Shoals Light. Frog. Sharkfin Shoal Light.
2	38 12 32.01	75 55 51.86	N 82 21 E N 26 49 W S 81 17 W	S 82 23 W S 26 48 E N 81 15 E	4968 3741 5422	Great Shoals Light. Frog. Sharkfin Shoal Light.
3	38 12 47.41	75 55 44.62	N 88 17 E N 33 40 W S 76 26 W	S 88 19 W S 33 41 E N 76 23 E	4734 3389 5711	Great Shoals Light. Frog. Sharkfin Shoal Light.
4	38 13 13.01	75 55 54.46	S 81 47 E N 39 34 W S 67 23 W	N 81 45 W S 39 35 E N 67 21 E	5045 2539 5729	Great Shoals Light. Frog. Sharkfin Shoal Light.
5	38 14 43.39	75 55 32.02	N 13 38 E N 34 19 W S 63 48 W	S 13 38 W S 34 20 E N 63 47 E	2408 3204 2468	Roar. Cow. Frog.
6	38 15 03.62	75 55 00.00	N 9 44 W N 53 32 W S 59 59 W	S 9 44 E S 53 33 E N 59 58 E	1683 3305 3541	Roar. Cow. Frog.
7	38 13 12.39	75 55 00.00	S 78 48 E N 57 10 W S 72 04 W	N 78 47 W S 57 11 E N 72 02 E	3613 3649 7082	Great Shoals Light. Frog. Sharkfin Shoal Light
8	38 13 10.60	75 54 40.80	S 78 04 E N 60 19 W S 73 42 W	N 78 03 W S 60 21 E N 73 39 E	3100 4116 7553	Great Shoals Light. Frog. Sharkfin Shoal Light.

BIG HILL.

(Mouth Nanticoke River—Chart No. 12.)

	Latitude	Longitude			Yards.	
1	38 12 23.70	75 56 45.82	N 81 34 E N 3 58 W S 82 08 W	S 81 37 W S 3 58 E N 82 07 E	6429 3629 3960	Great Shoals Light. Frog. Sharkfin Shoal Light.
2	38 12 29.41	75 56 47.82	N 83 20 E N 3 19 W S 79 15 W	S 83 22 W S 3 19 E N 79 14 E	6457 3433 3938	Great Shoals Light. Frog. Sharkfin Shoal Light.
3	38 12 32.10	75 56 32.89	N 83 45 E N 10 07 W S 79 04 W	S 83 48 W S 10 07 E N 79 01 E	6052 3397 4346	Great Shoals Light. Frog. Sharkfin Shoal Light.
4	38 12 25.42	75 56 36.84	N 81 47 E N 7 50 W S 81 48 W	S 81 49 W S 7 50 E N 81 46 E	6184 3596 4205	Great Shoals Light. Frog. Sharkfin Shoal Light.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GREAT SHOALS.

(Mouth Wicomico River—Chart No. 12.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 12 47.01	75 52 37.71	N 54 28 W	S 54 28 E	285	Great Shoals Light.
			S 39 20 W	N 39 19 E	1505	Short.
			S 57 44 E	N 57 43 W	1979	Dove.
2	38 13 00.41	75 54 00.00	S 37 25 E	N 37 25 W	2034	Short.
			S 81 19 E	N 81 18 W	1971	Great Shoals Light.
			N 11 40 E	S 11 40 W	1433	White.
3	38 13 13.97	75 54 00.00	S 30 49 E	N 30 48 W	2414	Short.
			S 68 49 E	N 68 48 W	2090	Great Shoals Light.
			N 17 01 E	S 17 01 W	990	White.
4	38 13 20.76	75 52 19.72	N 36 44 E	S 36 44 W	1545	Wind.
			S 28 34 E	N 28 35 W	2500	Dove.
			S 36 10 W	N 36 10 E	1219	Great Shoals Light.
5	38 12 49.82	75 52 24.28	S 48 49 E	N 48 49 W	1749	Dove.
			S 46 10 W	N 46 10 E	1818	Short.
			N 84 22 W	S 84 22 E	601	Great Shoals Light.

INGRAM SHOAL.

(Lower Wicomico River—Chart No. 12.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 13 38.61	75 52 23.64	S 21 12 W	N 21 12 E	1702	Great Shoals Light.
			N 58 14 E	S 58 14 W	1210	Wind.
			N 0 31 W	S 0 31 E	1877	Ella.
2	38 13 51.98	75 52 31.90	S 10 59 W	N 10 59 E	2075	Great Shoals Light.
			N 81 31 E	S 81 32 W	1262	Wind.
			N 8 06 E	S 8 06 W	1439	Ella.
3	38 13 57.26	75 52 18.97	S 18 28 W	N 18 28 E	2335	Great Shoals Light.
			N 89 29 E	S 89 30 W	904	Wind.
			N 6 28 W	S 6 28 E	1255	Ella

Survey of Oyster Bars, Wicomico County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HOLLAND.

(Lower Wicomico River—Chart No. 12.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 14 36.02	75 51 06.20	N 8 40 W	S 8 40 E	469	Holland.
			S 38 27 W	N 38 26 E	1659	Wind.
			S 32 56 E	N 32 56 W	414	Ball.
2	38 14 38.98	75 51 09.36	N 1 40 E	S 1 40 W	364	Holland.
			S 34 06 W	N 34 06 E	1690	Wind.
			S 34 36 E	N 34 35 W	545	Ball.
3	38 14 42.04	75 51 03.04	N 30 42 W	S 30 42 E	303	Holland.
			S 36 36 W	N 36 36 E	1871	Wind.
			S 14 23 E	N 14 23 W	569	Ball.
4	38 14 39.00	75 51 00.40	N 31 47 W	S 31 47 E	428	Holland.
			S 40 16 W	N 40 16 E	1834	Wind.
			S 9 00 E	N 9 00 W	454	Ball.

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

Survey of Oyster Bars, Wicomico County, Md.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of the legislature of Maryland approved April 2, 1906.]

AN ACT to establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That the following sections be, and they are hereby, added to Article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis; and the said commissioners shall further cause to be

delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie.

* * * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section. * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey, and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable, the limits and boundaries of the natural beds, bars and rocks, as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the same to the clerks of the Circuit Court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed, other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks, shall be construed in all the courts of the State to be barren bottoms, and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act; provided, that the said survey and report shall not be so construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act. * * *

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the Survey, is as follows:

An Act Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or levelling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.^a *And be it enacted,* That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the

^a Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses, (to be by them sworn or affirmed and examined) shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid, if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from First Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland had a twofold object in view:

1. *To encourage* an industry in oyster culture upon the *barren bottoms* beneath the tidewaters of the State.
2. *To prevent* the leasing of *natural oyster bars* for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoing them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the Commission."

DEFINITION OF A NATURAL OYSTER BAR.

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturists, may be made to yield a greater number of oysters than they now produce."

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

"The definition of a natural bar which very nearly approaches a reasonable and satisfactory compromise between the extreme views given above and which has therefore been adopted by the Commission, is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Tood, *v.* Job T. Moore. It is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them; and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the Act of Assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the Act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and cannot be located or appropriated by any individual."

APPENDIX C.—STATISTICS OF RESULTS OF THE COMBINED OPERATIONS OF THE GOVERNMENT AND STATE.

For a further understanding of the character of the oyster survey work that is being carried on in Maryland, the following statistical tabulation of the combined results of the various operations of both the Government and State will be of value. In this connection it should be remembered that

Survey of Oyster Bars, Wicomico County, Md.

these statistics only include the new work required to supplement the large amount of existing data obtained from the archives of the Coast and Geodetic Survey and utilized in the preparation of the charts and technical records.

Operations	County			Total.
	Anne Arundel	Somerset	Wicomico	
Natural oyster bars surveyed and delineated.....	91	37	• 15	143
Acres of natural oyster bars.....	33,666	27,566	1,638	^a 62,870
Crab bottoms surveyed and delineated.....		54		54
Acres of crab bottoms.....		32,108		32,108
Clam beds surveyed and delineated.....		3		3
Acres of clam beds.....		506		506
Boundary buoys located and planted.....	362	154	53	569
Triangulation landmarks established.....	123	86	30	^b 209
Miles of shore line covered by triangulation.....	110	125	46	^b 265
Square miles of water covered by triangulation.....	220	375	44	^b 620
Miles of examination of shell bottom with chain apparatus.....	369	296	58	723
Oyster investigation stations occupied.....	440	679	162	1,281
Number of soundings over shell bottoms.....	37,049	17,904	3,387	58,340
Square miles covered by soundings and chain apparatus.....	58	47	3	108
Projections prepared and plotted.....	9	13	2	^b 23
Leasing charts prepared.....	13	12	2	27
Oyster charts published.....	4	6	2	12
Reports published.....	2	2	2	6
Progress maps published.....	2	2	1	5

^a Total area of natural oyster bars of Connecticut is 5,770 acres.

^b Less quantities covered by statistics of more than one county.

COAST AND GEODETIC SURVEY

PROGRESS MAP

WICOMICO COUNTY
MARYLAND

To accompany report of work of United States
Coast and Geodetic Survey in cooperation
with the Maryland Shell Fish Commission

1907

- ⊙ Landmarks (Coast Survey Triangulation Stations)
- Waters contiguous to county
- Waters within territorial limits of county
- Limits of projections on file at Washington
- Limits of charts published by Coast and Geodetic Survey

Scale 1:100,000

CHART No.11.

CHART No.12.

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

WORCESTER COUNTY MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND REPORT
OF WORK OF UNITED STATES COAST AND GEODETIC SUR-
VEY IN COOPERATION WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE

1909

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, April 10, 1909.

SIR: I have the honor to transmit herewith a report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, and certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shell fish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, and 1909.

Respectfully,

O. H. TITTMANN, *Superintendent.*

TO HON. CHARLES NAGEL,

Secretary of Commerce and Labor.

CERTIFICATION.

ANNAPOLIS, MD., *April 8, 1909.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in the waters of Worcester County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. VATES,

Chief of Coast and Geodetic Survey Party,

Assistant, Coast and Geodetic Survey.

ANNAPOLIS, MD., *April 8, 1909.*

Examined and certified to be correct.

WALTER J. MITCHELL,

CASWELL GRAVE,

BENJAMIN K. GREEN,

Maryland Shell Fish Commission.

SWEPSON EARLE,

Hydrographic Engineer.

NOTE.—Certified copies of this publication and of the charts of the natural oyster bars of Worcester County were filed in the office of the clerk of the circuit court of Worcester County and in the office of the Board of Shell Fish Commissioners, at Annapolis, on April 12, 1909.

CONTENTS.

	Page.
PROGRESS MAP..... Follows	67
LETTER OF SUBMITTAL.....	3
CERTIFICATION.....	5
INTRODUCTION:	
Publications.....	11
Cooperation of the Coast and Geodetic Survey.....	12
Cooperation of the Bureau of Fisheries.....	12
General statement of work of Coast and Geodetic Survey.....	12
REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY:	
Instructions.....	14
Organization and equipment.....	15
Chronological statement of work.....	15
Statistics.....	16
General remarks.....	16
CHARTS AND MAPS:	
Charts of natural oyster bars.....	17
Leasing charts.....	18
Projections.....	19
Progress maps.....	19
BOUNDARIES OF THE COUNTY WATERS:	
Waters within territorial limits of county.....	20
Waters contiguous to county.....	20
LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS):	
Explanation.....	21
Method of describing triangulation stations.....	21
Descriptions of triangulation stations—	
Thorofare (see progress map).....	24
Collier (see progress map).....	24
Convent Water Tower (see progress map).....	25
Gantt (see progress map).....	25
Killick Shoal Light (Virginia) (see progress map).....	40
Chester (Virginia) (see progress map).....	41
Assateague Light (Virginia) (south of chart limits, see progress map).....	40
Chart No. 13 (Sinepuxent Bay)—	
Hamilton.....	26
Ocean City Water Tower.....	26
Harmon.....	26
Ocean.....	27
Buffing.....	27
Bullington Windmill.....	28
Gull.....	28
Inkquill.....	28
Seaside.....	29

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS)—Continued.

Descriptions of triangulation stations—Continued.

<i>Chart No. 13</i> (Sinepuxent Bay)—Continued.	Page.
Ellpow.....	30
Beach.....	30
Fassett.....	31
Shore.....	31
Nellys.....	32
Bar.....	32
Longwells Windmill.....	33
Sanpoi.....	33
Mud.....	33
Ingraya.....	34
Salt.....	34
North Beach Life-Saving Station (see also Chart No. 14).....	35
Birch (see also Chart No. 14).....	35
Neck.....	35
Newport.....	36
Handys Hammock (see also Chart No. 14).....	36
<i>Chart No. 14</i> (Upper Chincoteague Bay)—	
Birch (see also Chart No. 13).....	35
North Beach Life-Saving Station (see also Chart No. 13).....	35
Beacon Clumps.....	37
Turnagain (see also Chart No. 15).....	37
Green Run Inlet Life-Saving Station Flagstaff (see also Chart No. 15).....	38
Landlet.....	38
Guilberts Cupola.....	38
Ricks.....	38
Handys Hammock (see also Chart No. 13).....	36
<i>Chart No. 15</i> (Lower Chincoteague Bay)—	
Turnagain (see also Chart No. 14).....	37
Green Run Inlet Life-Saving Station Flagstaff (see also Chart No. 14).....	38
Maryland-Virginia (Life-Saving Station Beach).....	39
Maryland-Virginia (Pope Island).....	39
Pope Island Life-Saving Station (Virginia).....	40
Wildcat (Virginia).....	40
Long Point (Virginia).....	41
Grace M. E. Church (Virginia).....	41
Money (Virginia).....	41
Maryland-Virginia (Railroad).....	42
Mill.....	42
Tizz.....	43
BOUNDARIES OF OYSTER BARS:	
Explanation.....	44
Method of describing boundaries.....	45
Surveying methods for relocation of boundaries.....	46
Boundaries of natural oyster bars—	
<i>Chart No. 13</i> (Sinepuxent Bay)—	
South Point (see also Chart No. 14).....	49
Handys Hammock (see also Chart No. 14).....	49
Newport (see also Chart No. 14).....	50
<i>Chart No. 14</i> (Upper Chincoteague Bay)—	
South Point (see also Chart No. 13).....	49
Handys Hammock (see also Chart No. 13).....	49
Newport (see also Chart No. 13).....	50

BOUNDARIES OF OYSTER BARS—Continued.

Boundaries of natural oyster bars—Continued.

Chart No. 14 (Upper Chincoteague Bay)—Continued.

	Page
Lambertson Landing.....	50
Ennis.....	50
Turpin.....	51
Sandy Point.....	51
Robins Marsh.....	52
Scarboro Creek.....	52
Southwest.....	53
Purnell Hammock.....	53
Beef Creek (see also Chart No. 15).....	53
Rattlesnake (see also Chart No. 15).....	54
Martin Point (see also Chart No. 15).....	54
Diamond (see also Chart No. 15).....	54

Chart No. 15 (Lower Chincoteague Bay)—

Beef Creek (see also Chart No. 14).....	53
Rattlesnake (see also Chart No. 14).....	54
Martin Point (see also Chart No. 14).....	54
Diamond (see also Chart No. 14).....	54
Sheep.....	55
Mink Tump.....	55
Easter Cove.....	55
Big Bay Point.....	56
Kennel.....	56
Drum.....	56
Toby.....	57
Deep Water.....	57
Striking Marsh.....	57
Levin Tump.....	58
White Rock.....	58
Horsehead North.....	58
Horsehead South.....	59

APPENDICES:

Appendix A.—Laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.....	61
Appendix B.—“The Haman Oyster Culture Law” (extract from Second Report of Shell Fish Commission).....	64
Appendix C.—Summary of the particular surveying operations which constitute an “oyster survey” as now being carried on in Maryland.....	66
Appendix D.—Statistics of results of the combined operations of the Government and State.....	67

SURVEY OF OYSTER BARS, WORCESTER COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars of Maryland has been divided between the Government and the State in accordance with the laws ^a authorizing the work and the natural division of the surveying operations ^b of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.^c The charts show all legal boundaries of oyster bars within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster-bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report of the representative of the Coast and Geodetic Survey in charge of the work of that Service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.^d

The publications prepared and issued by the State under the direction of the Shell Fish Commission consist of annual reports^e of all the operations of the Commission

^a See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

^b See Appendix C for a summary of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland.

^c These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C. The publications ready for issue are those for Anne Arundel, Somerset, Wicomico, and Worcester counties; those for Calvert, St. Marys, and Charles counties are now being prepared.

^d The technical records and charts for each county are published separately on account of the requirements of the oyster-culture laws of the State and the practical considerations which make it desirable to have each county "opened up" for oyster culture as soon as practicable after the completion of its survey. For these reasons and the fact that these reports are each arranged for distribution and use in one county only without reference to other published records, much of the text of this publication is of necessity identical with similar previous publications for other counties.

^e These reports can be obtained by application to the Shell Fish Commission, Annapolis, Md. They are issued annually in October, and the first and second reports are now available for distribution.

performed under the provisions of the laws of Maryland,^a including results of biological and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of surveying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.^b

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the Service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential as a foundation for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an adviser in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.^c A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the Bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL STATEMENT OF WORK OF COAST AND GEODETIC SURVEY.^d

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need very

^a See Appendix B for an extract from the "Second Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman Oyster Culture Law."

^b See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

^c Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

^d For a detail statement of the very large amount of excellent oyster survey work of the Maryland Shell Fish Commission see the "Annual Reports of the Maryland Shell Fish Commission."

little other summary than is indicated by the published "Charts of Natural Oyster Bars" and the scheme of hydrographic projections and triangulation stations shown on the county progress maps attached to each report.

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster-survey operations.

The hydrographic projections and published charts are prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shellfish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to and permanently fixed by published technical descriptions which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County:"

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last sixty-five years.

In fact, when the survey of the oyster bars of Maryland is completed, it is believed that it will stand the test of time and practical use as a working foundation for whatever form the oyster legislation of the future may assume, and that the doing of the work systematically and accurately, once for all, means the establishment of a foundation of a great oyster industry by ineradicably locating the natural oyster bars for the use of the public, and a still greater permanent superstructure of real oyster culture as a reward for individual enterprise, by reason of the integrity of the survey by which the rights of the public are secured.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY IN WORCESTER COUNTY.

INSTRUCTIONS.

The following two letters, together with the laws^a of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the Survey at Washington, have proved very beneficial to the work, and are greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

His Excellency Hon. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

LAWRENCE O. MURRAY, *Assistant Secretary.*

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the commissioners, prepare a programme of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

* * * * *

Very respectfully,

Capt. C. C. YATES,
U. S. C. and G. S. Steamer Endeavor, Baltimore, Md.

O. H. TITTMANN, *Superintendent.*

^a For these laws see Appendix A.

ORGANIZATION AND EQUIPMENT.

The personnel and occupation of the party of the Coast and Geodetic Survey have remained practically unchanged since the beginning of the "oyster survey." Besides the chief of party, it consists of the necessary triangulators, computers, draftsmen, and temporary employees required to carry on both the surveying operations in the field and the preparation for publication of oyster charts and technical records in the Office at Washington.

The transportation equipment for the field work of the party in Worcester County was confined to hired launches and boats, as the waters of that region are too shallow for the use of the type of boats utilized by the Survey and the Commission in Chesapeake Bay.

It being impracticable to move the Shell Fish Commission house boat *Oyster* to the ocean coast of Maryland, the convenient living and office quarters furnished the Government on that vessel had to be exchanged for temporary quarters on shore.

The greater part of the equipment of instruments for the operations of both the Government and State has been furnished by the Coast and Geodetic Survey, and consists of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.

The field work in Worcester County dates from November 8, 1907, when the survey in Wicomico County was completed and the entire party moved to Chincoteague, Va., where headquarters were established.

On December 6, 1907, a subparty was organized for field work in the upper part of the county, the work of this party being done from a small house boat which was towed by a gasoline launch.

On December 19, 1907, all field work was closed for the season and office quarters established in Baltimore.^a

No further field work was done in Worcester County until March 23, 1908, when a subparty was organized to complete the triangulation, which work was finished on April 18, 1908.

On March 8, 1909, a subparty was organized to do some additional field work in Somerset County, and at the same time to inspect and replace certain triangulation monuments in Worcester County which were reported to have been injured. This latter work occupied thirteen days and was completed March 30, 1909.

The office work connected with Worcester County, including the preparation of the oyster charts and technical records for publication, has been continued intermittently from the beginning of the field work, on November 8, 1907, to the present time. The delay in the completion of the office work was due to various causes, but chiefly to the desirability of utilizing the new shore line being surveyed for other purposes by a topographic party of the Coast and Geodetic Survey. This topographic work was available for use in the preparation of publications in beginning of present year, and adds greatly to the accuracy and value of the published oyster charts of Worcester County.

^a Office rooms were furnished for the work of the Coast and Geodetic Survey in the new custom-house by courtesy of Hon. William F. Stone, collector of customs.

STATISTICS.^a

Landmarks and triangulation signals erected.....	36
Monuments planted to mark triangulation stations.....	34
Triangulation stations occupied for observations of horizontal angles.....	38
Old triangulation stations recovered.....	5
New triangulation stations established.....	43
Total old and new triangulation stations marked and described.....	48
Linear miles of shore line covered by triangulation (approximate).....	95
Square miles covered by triangulation (approximate).....	110
Hydrographic projections prepared and completed as records of oyster boundaries.....	5
Triangles computed.....	90
Geographic positions computed.....	45
Corners of oyster boundaries established by computation.....	108
Back azimuths and distances computed from corners of boundaries to triangulation stations.....	324
Descriptions of triangulation stations prepared for publication.....	48
Descriptions of oyster boundaries prepared for publication.....	28
"Charts of Natural Oyster Bars" prepared for publication.....	3
Progress map prepared for publication.....	1

GENERAL REMARKS.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore of the Bureau of Fisheries, whose well-known scientific knowledge of all matters relating to oysters has been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unfailing tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the Commission, who, as editor of the Commission's annual report and Commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Benjamin K. Green, treasurer of the Commission, who has looked after the equipment and commissary of the house boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Swepson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

To Thomas H. Robinson, counsel to the Commission, for courteously furnishing valuable information relating to county boundaries.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

^a These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of Worcester County, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts^a of the natural oyster bars of Worcester County, published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, consist of three sheets covering the greater part of the shores of Chincoteague and Sinepuxent bays, including all oyster-producing bottoms of Worcester County. They are published on a scale of 1 part in 20,000 (approximately $3\frac{1}{6}$ inches to a statute mile) and are constructed on polyconic projections which are based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the circuit court of Worcester County and in the office of the Commission at Annapolis, as required by the oyster laws of Maryland.

In addition to the oyster-bar and other boundaries, the charts show the location and name of all landmarks (U. S. Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography^b necessary to make the technical definitions and delineations of boundaries readily understandable both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars, especially by those not familiar with the use of maps.

The corners of the oyster bars are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, these points have two or more numbers, each number corresponding to the bar in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the heading "Boundaries of natural oyster bars."

The landmarks and oyster bars have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a

^a These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

^b Much of the detail of the inshore topography was obtained from the excellent map of Worcester County prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the U. S. Geological Survey.

particular oyster bar or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be indicated. To find the name of a bar or landmark which is only known by location, consult the progress map at the end of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey.

The boundaries of the waters within the "territorial limits of the county" opened up for the leasing with Worcester County are plainly indicated on the charts. A description of this boundary is given in this publication under the heading "Boundaries of the county waters."

The areas in acres of the oyster bars were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart within the boundaries of the different shellfish bottoms.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Worcester County, like those for Anne Arundel, Somerset, and Wicomico counties, have been prepared under the direction of the hydrographic engineer of the Commission. These charts are constructed on polyconic projections which are based on the United States standard datum of the Coast and Geodetic Survey. They are made on the scales of 1 part in 5,000 or 1 part in 10,000, as the needs of oyster culture may require. Anne Arundel County required 13 leasing charts, Somerset County 12, Wicomico County 2, and Worcester County 3 to cover their oyster bottoms.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to the area under consideration, and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as practicable.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in Annapolis.

PROJECTIONS.

The polyconic projections ^a covering Worcester County waters are 5 in number and on the scale of 1 part in 10,000. They were constructed by draftsmen of the Coast and Geodetic Survey, who also plotted the sextant positions which determine the location of the legal boundaries of the oyster bars as delineated by the Shell Fish Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster-bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the office of the Shell Fish Commission, at Annapolis.

PROGRESS MAPS.

The progress map to be found at the end of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the U. S. Coast and Geodetic Survey in Worcester County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress maps ^b accompanying the first and second annual reports of the Maryland Shell Fish Commission were prepared under the direction of the hydrographic engineer of the Commission. They are on the scale of 1 part in 400,000, and show the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey.

^a For the scheme of these projections see the progress map at the end of this publication.

^b These maps and reports can be obtained by application to Maryland Shell Fish Commission, Annapolis, Md.

BOUNDARIES OF THE COUNTY WATERS.^a

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line^b between the waters "within the territorial limits" of Worcester County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the charts and the smooth projections of the Coast and Geodetic Survey, is identical with the boundary line between the waters of Worcester County and the waters of the adjacent States of Delaware and Virginia excepting the waters of the Atlantic Ocean. Therefore technically all waters opened up for leasing with Worcester County are within the "territorial limits" of that county.

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the U. S. Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Annapolis," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for leasing with each county surveyed, it is necessary for the Shell Fish Commission to establish a boundary line between the waters contiguous to but not within the territorial limits of each county, and the waters contiguous to but not within the territorial limits of adjacent counties. But technically, as explained under the preceding heading of "Waters within territorial limits of county," there are no "waters contiguous to the county" in Worcester County excepting the waters of the ocean, and therefore there are no waters opened up for leasing with that county in which a person can lease "a greater amount than ten acres."

^a For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, Superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

^b See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the end of this publication.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION.

The oyster laws of Maryland authorizing the survey to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of location and character of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking a landmark has only an indefinite idea of its location. They gradually proceed from description of the general locality of a landmark to the descriptions of its immediate surroundings. This is followed by specific details of the character of the center and reference marks and a "round" of reference angles and distances which in themselves frequently contain enough information to furnish an independent and reliable location of the triangulation station.

METHOD OF DESCRIBING TRIANGULATION STATIONS.

The separate descriptions of triangulation stations should not be used without reading the following explanation of the method of describing the triangulation stations, as it contains certain details that are common to all the landmarks described in this publication and which are omitted in the separate descriptions as being needless repetitions.

Name.—The title at the top of each separate description is the name by which the landmark or triangulation station is known and designated in all work and published oyster records or oyster charts of both the Government and State. The selection of the name is usually left to the triangulator establishing the station, and it may or may not have geographic or other significance in reference to the locality.

General locality.—Under this heading is given the general locality of the landmark in reference to well-known and prominent natural or artificial features, such as the nearest body of water, town, river, steamer wharf, well-defined point of land, church, or any other feature that is likely to remain both permanent and prominent.

This heading also covers a reference to the published chart or map which shows the location of the station most clearly. Nearly all the triangulation stations described in this publication are plainly indicated by name and a triangulation symbol on the published charts of oyster bars of Maryland. In this case they are referred to by serial number only, the words "charts of oyster bars of Maryland" being omitted to avoid needless repetition. These published oyster charts are on the large scale of 1 part in 20,000 (approximately $3\frac{1}{2}$ inches to a statute mile) and show the location of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Immediate locality.—Under this heading is given the description of the "observed station" in reference to its immediate surroundings. This is supposed to include a statement of the station's estimated elevation above high water or some other well-defined level of the locality, such as a road or house; the character of the ground on which it is located, such as marsh land, sand beach, cultivated field, or meadow; estimated bearings in points of the compass and estimated distances in yards *from* (not *to*) easily recognized features, such as extreme end of point, edge of bluff, bank of creek, line of telephone poles, shore line, barn, house, fence, ditch, trees, or any other definite detail, such as being on range with the tangent of an island and a church; and so forth.

When a standard monument has been established near the station as a "reference station," this heading also covers a statement of the true bearing of the monument in degrees and minutes and its measured distance in meters, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached and might be mistaken for the center mark of the "observed station" unless special attention is called to it.

The distinction between the "observed station" and "reference station" should be carefully noted by anyone making use of the description of stations for any future surveying operations.

The "observed station" is located at the particular triangulation point covered by the description of stations, and is the one whose geographic position is first computed, as it is the point which was "occupied" and "observed on" for horizontal angles. However, in spite of the primary importance of the location of the "observed station," it will be noted from the description of stations that frequently it is not marked as well as the "reference station," and in many instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate "observed stations" on edges of banks and ends of points of land, which in the tide-water section of Maryland generally means they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the great need of "reference stations," if the frequent reestablishment of a new framework of triangulation is to be avoided.

The chief reason and need for the establishment of the "reference station," or secondary station, as it might be well named, is explained in the preceding paragraph, but in several instances other reasons, such as the location of the "observed station"

on an unstable sand dune, in a cultivated field, in front of a residence, or other places objectionable to the landowner, have led to establishment of "reference stations." The location of the "reference station" in relation to the "observed station" is fixed for plotting on charts or for computation of its geographic position by checked measurements of its distances and azimuth from the "observed station."^a

Marks.—Under this heading is given a description of the character of the permanent monuments or other marks of the location of the "observed station," and of the "reference station" where one has been established.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. F. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground, unless otherwise stated.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

References.—Under this heading are given the "rounds" of directions and distances to all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or "reference station" when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described, this, if possible, being a light-house, church spire, or other permanent and prominent point. Its direction is taken as being $0^{\circ} 00' 00''$, and the directions of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing^b of the initial object is always given in parentheses alongside its name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by horizontal angles or for the relocation of corner buoys of oyster-bar boundaries by the method of compass directions described in this publication under the heading of "Boundaries of oyster bars."

^a Geographic coordinates (latitude, longitude, distance, and azimuth) relating to any of the "observed stations" or of the "reference stations" described in this publication can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

^b The mean magnetic variation for Worcester County was $5^{\circ} 55'$ west of north in 1909 and increasing at the rate of $3\frac{1}{2}'$ yearly.

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of angular measure with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

THOROFARE.

General locality.—Western shore of Sinepuxent Bay and southern shore of Isle of Wight Bay on land known as Drum Point. (See progress map.)

Immediate locality.—Observed station is on "Thorofare Farm," about 400 yards from Sinepuxent Bay and 165 yards southwest from the Thorofare. It is in a cultivated field about 8 feet above high-water mark on the second knoll southwest from the Thorofare, 400 yards north of "Thorofare Farm" house, 200 yards west of a wagon trail, and 32 yards southwest of the lowest point of the hollow between the two knolls.

Marks.—Observed station is center point of triangle on standard cement monument buried with top 12 inches below surface of ground. Cement monument marking reference station is in bottom of hollow between the two knolls 51.032 meters N 65° 21' E of observed station and about on range with Isle of Wight Life-Saving Station.

References.—

	°	'	"	
"Hamilton" (S 32° 06' E).....	0	00	00	1½ miles.
Middle of lookout of Ocean City Life-Saving Station.....	5	09	--	1¾ miles.
Presbyterian Church spire.....	5	53	--	1¾ miles.
Flagstaff on middle of square roof of Atlantic Hotel.....	9	47	--	1⅞ miles.
Power-house chimney.....	9	53	--	1⅞ miles.
"Ocean City Water Tower".....	9	55	--	1¾ miles.
Ice-plant stacks.....	17	12	--	2 miles.
Between two chimneys on top of Tabor house on Tabor Hill.....	24	01	--	1¾ miles.
Chimney of "Thorofare Farm" house.....	35	01	--	¾ mile.
Chimney on gray house.....	89	00	--	½ mile.
Left chimney on white house.....	116	04	--	1 mile.
Left chimney on white house.....	150	05	--	3 miles.
REFERENCE STATION.....	245	21	20	51.032 meters.
Center of Isle of Wight Life-Saving Station.....	245	24	30	4 miles.
"Convent Water Tower".....	334	30	20	1¾ miles.
Episcopal Church spire.....	359	05	--	1½ miles.

COLLIER.

General locality.—Eastern shore of Sinepuxent Bay about one-half way between bay and ocean, ¼ mile north-northeast of "Convent Water Tower" and ½ mile south of Collier Islands. (See progress map.)

Immediate locality.—Observed station is on sand and grass beach land about 3 feet above high water, about 65 yards west of top of sand dunes, 8 yards north of a high-water overflow, and 42 yards west of line of telephone poles.

Marks.—Observed station is center point of triangle on standard cement monument buried with top 4 inches below surface of sand.

References.—

	°	'	"	
"Thorofare" (N 71° 43' W).....	0	00	00	1 ¼ miles.
Right tangent of Dog and Bitch islands.....	22	33	--	¾ mile.
Left tangent of Collier Islands.....	46	12	--	½ mile.
Isle of Wight Life-Saving Station.....	86	55	--	3¾ miles.
Eighth telephone pole north of convent.....	137	40	10	50 yards.
Seventh telephone pole north of convent.....	233	01	40	65 yards.
Convent chimney.....	263	35	--	¼ mile.
"Convent Water Tower".....	268	53	30	¼ mile.
Episcopal Church spire.....	271	19	30	1 mile.
Flagstaff on Atlantic Hotel.....	272	04	--	1½ miles.
Power-house chimney.....	272	55	--	1½ miles.
"Ocean City Water Tower".....	274	05	--	1¾ miles.
Ice-plant stacks.....	275	36	--	1¾ miles.
Left tangent of water tank at Ocean City bridge.....	281	53	--	1½ miles.
Between chimneys on Tabor house on Tabor Hill.....	288	06	--	1½ miles.
Chimney of "Thorofare Farm" house.....	345	11	--	1¼ miles.

CONVENT WATER TOWER.

General locality.—Between Sinepuxent Bay and Atlantic Ocean, about 1 mile north-northeast of "Ocean City Water Tower." (See progress map.)

Immediate locality.—Observed station is on a large wooden water-tower structure belonging to the Convent of Saint Rose, at Ocean City. This tower is detached from the main building and is a very prominent object.

Marks.—Observed station is center point of top part of water-tank structure.

References.—None necessary.

GANTT.

General locality.—Western shore of Sinepuxent Bay, opposite Ocean City and about ½ mile back from the water. (See progress map.)

Immediate locality.—Observed station is in cultivated field on Gantt (formerly Davis) farm, and is about 10 feet above high water. It is about 300 yards north by west of the old Davis farmhouse, on a ridge or slight rise of ground making out from woods, 260 yards east-southeast of old woods and 90 yards east of a young growth of pines adjacent to old woods. It is also about 70 yards north of east-and-west wire fence and ditch and 83 yards west of a north-and-south fence and road running to farmhouse. Cement monument marking reference station is 85.44 meters S 89° 48' W of station in the edge of young growth of pines.

Marks.—Observed station is center point of triangle on standard cement monument buried with top 2 feet below the surface of the ground. Reference station is center point of triangle on standard cement monument with top about 4 inches above the ground.

References.—

	°	'	"	
"Harmon" (S 4° 38' W).....	0	00	00	1 mile.
REFERENCE STATION.....	85	10	30	85.44 meters.
East tip of barn roof.....	195	45	--	¾ mile.
Chimney of "Thorofare Farm" house.....	206	10	--	¾ mile.
Middle chimney of Convent.....	259	40	--	1½ miles.
Episcopal Church spire.....	286	35	30	1¼ miles.
Catholic Church cross.....	300	49	--	1¼ miles.
"Ocean City Water Tower".....	303	30	--	1¼ miles.
Power-house chimney.....	304	19	--	1¼ miles.
Flagstaff on square roof of Atlantic Hotel.....	304	45	--	1¼ miles.
Ice-plant stack.....	316	53	--	1¼ miles.
Left chimney of house on Tabor Hill.....	320	28	--	1 mile.
Near chimney on house on Tabor farm.....	359	31	--	¾ mile.

HAMILTON.

General locality.—Eastern shore of Sinepuxent Bay, in Ocean City, about $\frac{1}{2}$ mile northeast of the railway bridge and two-thirds the way from Sinepuxent Bay to the board walk on the ocean side. (See progress map.)

Immediate locality.—Observed station is on sand and grass land about 6 yards east-southeast of the extension of the east curb line of Philadelphia avenue, 145 yards northwest of Episcopal Church spire, 16 yards east-southeast of the telephone line edge of wagon trail along proposed Philadelphia avenue, and 40 yards north of an exposed line of sewer pipe.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Harmon" (S 66° 20' W).....	0	00	00	1 $\frac{1}{4}$ miles.
Chimney of house on Thorofare Farm.....	73	11	—	1 $\frac{1}{2}$ miles.
Right tangent of Drum Point.....	91	14	—	1 mile.
Left tangent of island.....	110	31	—	$\frac{3}{4}$ mile.
"Convent Water Tower".....	140	43	—	$\frac{3}{4}$ mile.
South end of roof of Quillin's cottage.....	183	33	—	400 yards.
Peak on tower of Doyle cottage.....	198	09	—	350 yards.
Chimney of Mervue cottage.....	226	40	—	350 yards.
Chimney of Hotel Hamilton.....	229	53	—	225 yards.
Episcopal Church spire.....	241	44	—	145 yards.
Chimney on Atkins cottage.....	275	50	—	175 yards.
Flagstaff on left end of Mount Pleasant Hotel.....	287	36	—	$\frac{1}{4}$ mile.
Presbyterian Church spire.....	305	42	50	$\frac{1}{4}$ mile.
Power-house chimney.....	308	56	—	$\frac{1}{4}$ mile.
"Ocean City Water Tower".....	312	31	—	$\frac{1}{2}$ mile.
Between two chimneys on Tabor house.....	347	40	—	1 mile.
Left chimney of Gray's house.....	357	14	—	1 $\frac{1}{4}$ miles.

OCEAN CITY WATER TOWER.

General locality.—Between Atlantic Ocean and Sinepuxent Bay, in Ocean City, Md. (See Chart No. 13.)

Immediate locality.—Observed station is located about 80 yards north by east of Ocean City railroad station, 30 yards south by west from curb of Talbot street, and 60 yards west by north from curb of Baltimore avenue. It is on a steel structure 100 feet high, supporting a large round water tank 25 feet deep, which is known as "Ocean City Water Tower."

Marks.—Observed station is center point of upper end of standpipe.

References.—None necessary.

HARMON.

General locality.—West shore of Sinepuxent Bay, about $\frac{3}{4}$ mile back from west end of railroad bridge and just south of the B. C. & A. railway tracks. (See Chart No. 13.)

Immediate locality.—Observed station is about 170 yards east of the first pine woods from the bay shore and about 145 yards east of some young growth pines adjacent to the woods. It is in a field about 72 yards south of the east and west railway tracks and about 65 yards south of the railway fence.

Marks.—Observed station is center point of triangle on standard cement monument buried with top about 12 inches below the surface of the ground.

References.—

	o	'	"	
"Gantt" (N 4° 38' E).....	0	00	00	1 mile.
Near chimney of Harmon house.....	1	46	—	$\frac{1}{4}$ mile.
"Convent Water Tower".....	48	59	30	1 $\frac{3}{4}$ miles.
Convent high chimney (not ventilator).....	49	51	—	1 $\frac{3}{4}$ miles.
Episcopal Church spire.....	64	27	—	1 $\frac{1}{4}$ miles.
Presbyterian Church spire.....	71	26	—	1 $\frac{1}{4}$ miles.
Right chimney of Tabor house.....	75	—	—	$\frac{3}{4}$ mile.

	°	'	"	
"Ocean City Water Tower"-----	77	04	10	1½ miles.
Power-house chimney-----	79	01	--	1 mile.
Flagstaff on square roof of Atlantic Hotel-----	80	18	--	1 mile.
Cropper's ice-plant stacks-----	92	31	--	1 mile.
Corner of fence and woods-----	218	--	--	242 yards.
Corner of railroad fence and woods-----	291	--	--	138 yards.
3 or 4 small trees-----	126	--	--	¾ mile.
Left clump of trees-----	157	--	--	¾ mile.

OCEAN.

General locality.—Eastern shore of Sinepuxent Bay, about one-third way from bay to ocean and about ⅔ mile south-southwest of "Ocean City Water Tower." (See Chart No. 13.)

Immediate locality.—Observed station is on sand and grass land about 8 yards east of telephone line and about 2 yards west of an old line of poles formerly used to support wires. It is apparently in proposed extension of Philadelphia avenue, but this is uncertain, as the street lines are indefinite in this locality.

Marks.—Observed station is center point of triangle on standard cement monument buried with top 12 inches below surface of sand.

References.—

	°	'	"	
"Buffing" (S 64° 10' W)-----	0	00	00	1¼ miles.
Near corner of ice house sill-----	16	51	--	110 yards.
Left chimney on Harmon house-----	49	32	--	1 mile.
Left chimney of Tabor house-----	78	45	--	¾ mile.
Left stack of Cropper's ice plant-----	127	19	--	170 yards.
Left tangent of Captain Ludlam's office-----	133	04	--	165 yards.
Near chimney on Ocean City station-----	140	10	--	¾ mile.
"Ocean City Water Tower"-----	141	52	--	¾ mile.
Power-house chimney-----	146	17	--	¾ mile.
Flagstaff on Atlantic Hotel-----	149	50	--	¾ mile.
Chimney of 2½-story house-----	162	49	--	200 yards.
Near corner of house-----	181	58	--	200 yards.
Near corner of T. Cropper house-----	254	08	--	33 yards.
Chimney of white house-----	311	45	--	200 yards.
Near corner of Baker house-----	352	22	--	1¾ miles.
Baker windmill-----	353	18	--	1¾ miles.
Chimney of Buffington house-----	358	13	--	1¾ miles.
"Buffington Windmill"-----	358	35	--	1¾ miles.

BUFFING.

General locality.—Western shore of Sinepuxent Bay, on lowland about 200 yards northeast of knoll known locally as "Steam Mill Hill" and about 1½ miles southwest of Ocean City. (See Chart No. 13.)

Immediate locality.—Observed station is on sand and loam land about 2 feet above high water, 25 yards west from shore, 65 yards northwest of where wire fence meets shore, 30 yards northeast of nearest point of fence, and 60 yards from junction of fence and pine woods.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Harmon" (N 13° 19' E)-----	0	00	00	¾ mile.
"Convent Water Tower"-----	29	02	--	2¾ miles.
Between chimneys on Tabor house on Tabor Hill-----	30	34	--	1¼ miles.
Episcopal Church spire-----	36	31	--	2 miles.
Middle of Ocean City Life-Saving Station tower-----	41	35	--	2 miles.
"Ocean City Water Tower"-----	41	21	--	1½ miles.

	°	'	"	
Power-house chimney.....	42	47	--	1½ miles.
Flagstaff on square roof of Atlantic Hotel.....	43	48	--	1½ miles.
Cropper's ice-plant stacks.....	47	19	--	1¼ miles.
Left end of fence at shore.....	155	01	--	65 yards.
Left chimney of Kelley brown house.....	187	03	--	1 mile.
Chimney at right end of roof of Buffington house.....	207	50	--	200 yards.
"Buffington Windmill".....	213	28	--	200 yards.
Fence and woods.....	272	51	--	60 yards.
Chimney on top of hip roof of house.....	311	14	--	½ mile.
Right tangent of woods.....	311	14	--	60 yards.
Middle of convent roof.....	29	53	--	2½ miles.

BUFFINGTON WINDMILL.

General locality.—Western shore of Sinepuxent Bay, on knoll known locally as "Steam Mill Hill" and about 1½ miles southwest of Ocean City. (See Chart No. 13.)

Immediate locality.—Near house belonging to Mr. Buffington.

Marks.—Observed station is center of windmill tower.

References.—None necessary.

GULL.

General locality.—Eastern shore of Sinepuxent Bay nearly halfway between bay and ocean and about 1 mile south-southwest of Ocean City. (See Chart No. 13.)

Immediate locality.—Observed station is on sand and grass beach land about 2 feet above high water, 130 yards west of Life-Saving Service telephone line, 200 yards west of top of sand dunes and 65 yards south of a square marble pillar projecting above ground in middle of a bare washed space. Cement monument marking reference station is 7.68 meters S 88° 58' W of observed station and about on line with left end of woods below Buffington farmhouse.

Marks.—Observed station is nail in stub flush with sand and grass. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Buffing" (N 67° 04' W).....	0	00	00	¾ mile.
Right end of barn roof.....	9	19	--	1½ miles.
Chimney on near side of roof of gray house.....	12	07	--	1½ miles.
Near chimney of Harmon house.....	45	13	--	1¼ miles.
Near chimney of Gantt farm house.....	55	33	--	2½ miles.
Near chimney of gray house.....	64	44	--	3 miles.
Near end of roof of Tabor house on Tabor Hill.....	74	42	--	1 mile.
Left tangent of water tank on left end of Ocean City bridge.....	82	54	--	1⅛ miles.
Between stacks of Cropper's ice plant.....	92	21	--	1 mile.
"Ocean City Water Tower".....	93	34	--	1¼ miles.
Power-house chimney.....	94	54	--	1⅜ miles.
Flagstaff on square roof of Atlantic Hotel.....	95	54	--	1¼ miles.
Near chimney of Kelley house.....	304	04	--	1¼ miles.
Left chimney on Baker house.....	329	05	--	1⅛ miles.
Baker windmill.....	330	14	--	1 mile.
REFERENCE STATION.....	336	01	30	7.685 meters.
Chimney on Buffington house.....	352	42	--	¾ mile.

INKQUILL.

General locality.—Western shore of Sinepuxent Bay, near Coffins Point, about 2¾ miles southwest of Ocean City. (See Chart No. 13.)

Immediate locality.—Observed station is on top of a shell knoll about 10 feet above high-water mark, 30 yards west of shore, 100 yards from corner of fence near Kelley house, 150 yards from near corner of Kelley house, and about 55 yards southeast of a ditch. *

Marks.—Observed station is center point of triangle on standard cement monument buried with top 12 inches below surface of ground.

References.—

	°	'	"	
"Buffing" (N 20° 01' E).....	0	00	00	1 mile.
Near end of roof on Tabor house on Tabor Hill.....	13	27	--	2½ miles.
"Convent Water Tower".....	16	19	--	3½ miles.
Between two chimneys on middle of convent roof.....	16	58	--	3½ miles.
Church spire.....	20	05	--	2¾ miles.
"Ocean City Water Tower".....	21	46	--	2¾ miles.
Power-house chimney.....	22	38	--	2¾ miles.
Flagstaff on square roof of Atlantic Hotel.....	23	15	--	2¾ miles.
Cropper's ice-plant stacks.....	23	32	--	2 miles.
Tangent of land.....	25	38	--	170 yards.
Tangent of land.....	89	52	--	40-50 yards.
Left tangent of fence.....	156	40	--	125 yards.
Corner of fence.....	178	05	--	100 yards.
Near chimney of Kelley house.....	184	04	--	150 yards.
Chimney of gray house.....	203	23	--	3 miles.
Chimney of large four-sided roof.....	215	03	--	1½ miles.
Baker windmill.....	331	42	--	½ mile.
"Buffington Windmill".....	356	42	--	¾ mile.
Chimney of Buffington house.....	357	27	--	¾ mile.

SEASIDE.

General locality.—Eastern shore of Sinepuxent Bay, about halfway between bay and ocean and about 2¼ miles south-southwest of Ocean City. (See Chart No. 13.)

Immediate locality.—Observed station is on sand and grass land about 4 feet above high water. It is on the north side of an overflow from the ocean, about 200 yards from Sinepuxent Bay and 120 yards west-northwest of sand dunes between the ocean and the station. Cement monument marking reference station is 10.32 meters N 52° 39' E of observed station. No other permanent reference objects near station.

Marks.—Observed station is nail in stub flush with ground. Reference station is center point of triangle on standard cement monument with top 4 inches above ground.

References.—

	°	'	"	
"Inkquill" N 66° 35' W).....	0	00	00	¾ mile.
Baker house.....	22	--	--	1 mile.
Chimney on Buffington house.....	43	56	--	1¼ miles.
Tabor house on Tabor Hill.....	78	35	--	2 miles.
"Ocean City Water Tower".....	89	18	--	2¼ miles.
Power-house chimney.....	90	01	--	2¼ miles.
Flagstaff on square roof of Atlantic Hotel.....	90	35	--	2¼ miles.
Telephone pole.....	106	40	10	81.4 meters.
REFERENCE STATION.....	109	14	20	10.32 meters.
Telephone pole.....	141	07	00	39.5 meters.
Telephone pole.....	217	51	10	47.8 meters.
Right chimney of Coffin Hotel.....	321	47	--	2 miles.
Right chimney of Kelley brown house.....	353	40	--	¾ mile.

ELLPOW.

General locality.—Western shore of Sinepuxent Bay, about $\frac{1}{4}$ mile inland from what is known locally as Powell Point and about $3\frac{1}{2}$ miles southwest of Ocean City. (See Chart No. 13.)

Immediate locality.—Observed station is on marshy grass land well back from bay, near a property line indicated by crab apple trees and a wire fence which runs from bay to crab apple trees and joins a snake fence. It is about $\frac{1}{4}$ mile southeast of Hastings house, about $\frac{1}{4}$ mile southwest of Kelley house, and about $\frac{1}{4}$ mile northeast of Coffin Hotel (a large, unpainted, square house with four-sided roof). Cement monument marking reference station is 7.20 meters S $83^{\circ} 50'$ W of observed station.

Marks.—Observed station is nail in pine stub flush with the ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Fassett" (S $10^{\circ} 32'$ W).....	0	00	00	$1\frac{1}{4}$ miles.
"North Beach Life-Saving Station".....	0	10	30	$6\frac{3}{8}$ miles.
Chimney of Henry brick house.....	9	48	--	$1\frac{1}{8}$ miles.
Chimney on right side of four-sided roof of Coffin Hotel.....	59	46	--	$\frac{1}{4}$ mile.
REFERENCE STATION.....	73	18	00	7.20 meters.
Chimney on left end of roof of Hastings house.....	133	16	--	$\frac{1}{4}$ mile.
Baker windmill.....	203	41	--	$1\frac{3}{8}$ miles.
Center of roof of Baker house.....	205	02	--	$1\frac{3}{8}$ miles.
"Buffington Windmill".....	205	39	--	$1\frac{7}{8}$ miles.
Chimney of Buffington house.....	206	00	--	$1\frac{7}{8}$ miles.
"Ocean City Water Tower".....	214	08	--	$3\frac{1}{2}$ miles.
Power-house chimney.....	214	44	--	$3\frac{1}{2}$ miles.
Flagstaff on square roof of Atlantic Hotel ..	215	10	--	$3\frac{1}{2}$ miles.

BEACH.

General locality.—Eastern shore of Sinepuxent Bay, about halfway between bay and ocean and about 3 miles south-southwest of Ocean City. (See Chart No. 13.)

Immediate locality.—Observed station is on sand and grass beach land about 3 feet above high water, 250 yards west of shore of Sinepuxent Bay and 2 feet east of line of telephone poles. Cement monument marking reference station is 6.40 meters N $0^{\circ} 23'$ E of observed station. No other permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument. Reference station is center point of triangle on standard cement monument. (NOTE.—Reported lost in shifting sand at date of publication.)

References.—

	o	'	"	
"Inkquill" (N $22^{\circ} 59'$ W).....	0	00	00	$1\frac{1}{8}$ miles.
Cupola on Baker house.....	3	15	--	$1\frac{1}{2}$ miles.
Baker windmill.....	4	14	--	$1\frac{1}{2}$ miles.
Nearest chimney on Baker house.....	5	07	--	$1\frac{1}{2}$ miles.
Cupola on Buffington barn.....	15	20	--	$1\frac{7}{8}$ miles.
"Buffington Windmill".....	16	41	--	$1\frac{7}{8}$ miles.
Chimney on left end of roof of Buffington house.....	17	00	--	$1\frac{7}{8}$ miles.
REFERENCE STATION.....	23	21	50	6.40 meters.
Between two chimneys on Harmon house.....	24	21	--	$2\frac{1}{8}$ miles.
Tabor house on Tabor Hill.....	37	08	--	$2\frac{7}{8}$ miles.
Cropper's ice-plant stacks.....	44	00	--	$2\frac{3}{4}$ miles.
"Ocean City Water Tower".....	44	58	--	3 miles.
Flagstaff on square roof of Atlantic Hotel.....	45	54	--	3 miles.
Point of four-sided roof.....	249	21	--	$3\frac{3}{8}$ miles.

	°	'	"	
"Longwells Windmill".....	249	45	--	3 $\frac{3}{8}$ miles.
Chimney on near end of Henry brick house..	287	40	--	2 miles.
Left tangent of Coffin Hotel.....	301	13	--	2 miles.
Right chimney of large white house.....	315	37	--	2 miles.
Left chimney on Kelley brown house.....	356	21	--	1 $\frac{1}{8}$ miles.

FASSETT.

General locality.—Western shore of Sinepuxent Bay about $\frac{1}{2}$ mile north-northeast of Fassett Point. (See Chart No. 13.)

Immediate locality.—Observed station is on shell and marsh land about 2 feet above high water, 120 yards south by east from slough making into marsh, about 140 yards west of side of point, and 110 yards north of side of point. It is about 200 yards northeast of a fence with a clump of trees beyond it.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"North Beach Life-Saving Station" (S 10°	0	'	"	
43' W).....	0	00	00	5 $\frac{1}{2}$ miles.
Tangent of point.....	7	45	--	300 yards.
"Nellys".....	13	56	40	$\frac{3}{4}$ mile.
Left of clump of trees.....	21	33	--	500 yards.
Right edge of clump of trees.....	51	20	--	400 yards.
Chimney on gray house.....	89	05	--	$\frac{5}{8}$ mile.
Right tangent of roof of brick house.....	133	15	--	$\frac{3}{4}$ mile.
Chimney on center of red roof on white house..	141	26	--	$\frac{3}{4}$ mile.
Chimney on left side of a French roof house...	165	10	--	2 miles.
Slough.....	167	--	--	120 yards.
Baker windmill.....	192	36	--	2 $\frac{1}{2}$ miles.
Chimney on right edge of Baker house.....	193	24	--	2 $\frac{1}{2}$ miles.
"Buffington Windmill".....	195	27	--	3 miles.
Between chimneys on Tabor house near Ocean				
City bridge.....	200	53	--	4 $\frac{1}{2}$ miles.
"Ocean City Water Tower".....	205	23	--	4 $\frac{5}{8}$ miles.
"Convent Water Tower".....	203	05	--	5 miles.
Power-house chimney.....	205	49	--	5 miles.
Flag pole on square roof of Atlantic Hotel....	206	08	--	4 $\frac{5}{8}$ miles.

SHORE.

General locality.—Eastern shore of Sinepuxent Bay, about halfway between the bay and the ocean and about $4\frac{1}{4}$ miles south-southwest of Ocean City. (See Chart No. 13.)

Immediate locality.—Observed station is on sand and grass beach land about 2 feet above high water and 16 yards east of line of Life-Saving Service telephone line poles. Cement monument marking reference station is 6.78 meters N 72° 59' E of observed station. No other permanent objects near station.

Marks.—Observed station is nail in stub about 3 inches above sand. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Ellpow" N 29° 35' W).....	0	00	00	1 $\frac{3}{4}$ miles.
Chimney of gray house.....	21	19	--	2 $\frac{1}{4}$ miles.
Baker windmill.....	28	55	--	2 $\frac{5}{8}$ miles.
Left chimney of Kelley brown house.....	29	32	--	2 miles.
Baker house beyond.....	29	33	--	2 $\frac{1}{2}$ miles.
"Buffington Windmill".....	34	59	--	3 miles.
Buffington house chimney.....	35	11	--	3 miles.

Survey of Oyster Bars, Worcester County, Md.

	o	'	"	
Chimney of Tabor house on Tabor Hill-----	46	35	--	4½ miles.
"Ocean City Water Tower"-----	52	06	--	4¼ miles.
Power-house chimney-----	52	29	--	4¼ miles.
REFERENCE STATION-----	102	33	45	6.78 meters.
Top point of large four-sided roof-----	267	58	--	2½ miles.
"Longwells Windmill"-----	268	30	--	2¼ miles.
Large chimney on house in woods-----	278	02	--	2½ miles.
Left chimney of Henry house-----	287	35	--	1½ miles.
Left chimney of brick house-----	330	41	--	2 miles.
Chimney on left end of gray house-----	340	06	--	2 miles.
Left chimney of Coffin Hotel-----	349	42	--	1¾ miles.

NELLYS.

General locality.—Western shore of Sinepuxent Bay, about 1¼ miles north of Sandy Point on a point of land near place called Nellys Bar. See Chart No. 13.)

Immediate locality.—Observed station is about 5 feet above high water, 45 yards west-northwest of extreme end of point, 25 yards from north side of point and 20 yards from south side of point. It is on the edge of a cultivated field and about ¼ mile southeast of a large old-fashioned 2½-story brick house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Fassett" N 24° 40' E)-----	0	00	00	¾ mile.
"Buffington Windmill"-----	1	11	30	4 miles.
Chimney of Buffington house-----	1	22	--	4 miles.
Between two chimneys on Kelley house-----	3	54	--	2½ miles.
Near end of roof of Tabor house-----	5	51	--	5 miles.
"Convent Water Tower"-----	8	00	--	6½ miles.
Middle of convent-----	8	21	--	6½ miles.
Church spire-----	9	24	--	6 miles.
Church spire-----	9	36	--	6 miles.
"Ocean City Water Tower"-----	9	43	--	6 miles.
Power-house chimney-----	10	05	--	6 miles.
Middle of square roof of Atlantic Hotel-----	10	22	--	6 miles.
"North Beach Life-Saving Station"-----	163	40	40	4½ miles.
Tangent of Sandy Point-----	174	02	--	1¼ miles.
Weather vane on Longwell house-----	192	40	--	1 mile.
"Longwells Windmill"-----	194	06	--	1 mile.
Left chimney of Henry brick house-----	300	02	--	¾ mile.

BAR.

General locality.—Eastern shore of Sinepuxent Bay, about halfway between bay and ocean and about 5¼ miles south-southwest of Ocean City. (See Chart No. 13.)

Immediate locality.—Observed station is on sand and grass beach land about 3 feet above high water, 110 yards west of top of sand dunes, and 5 yards east of line of Life-Saving Service telephone poles. There are no permanent objects near the station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Nellys" (N 66° 14' W)-----	0	00	00	1½ miles.
Southerly chimney of Henry brick house-----	4	33	--	1¼ miles.
Chimney on northerly end of roof with two gable windows-----	34	33	--	2 miles.
Chimney on middle of red roofed white house-----	37	42	--	2¾ miles.
Left chimney of large white house-----	39	27	--	2¾ miles.

	°	'	"	
Chimney on southerly corner of four-sided roof of gray house.....	48	20	--	2½ miles.
Baker windmill.....	72	16	--	3½ miles.
"Buffington Windmill".....	76	16	--	3½ miles.
Buffington house chimney.....	76	25	--	3½ miles.
"Ocean City Water Tower".....	89	05	--	5¼ miles.
Power-house chimney.....	89	24	--	5¼ miles.
Telephone pole.....	80	28	--	32 yards.
Telephone pole.....	275	45	--	65 yards.
Middle of roof of Longwell house.....	324	48	--	1½ miles.

LONGWELLS WINDMILL.

General locality.—Western side of Sinepuxent Bay, about ¼ mile north by west from Sandy Point. (See Chart No. 13.)

Immediate locality.—Observed station is on tower in rear of house on "Longwell Farm."

Marks.—Observed station is center of windmill.

References.—None necessary.

SANPOI.

General locality.—Western shore of Sinepuxent Bay, on Sandy Point. (See Chart No. 13.)

Immediate locality.—Observed station is on sage land 2 feet above high-water mark, about 80 yards west of extreme end of point, which is well rounded, 40 yards north of one shore of the point and 110 yards south of the other shore of the point. It is about 25 yards east-southeast of one end of a grove of crab-apple trees and about 110 yards south of the other end. Small bushes about 18 inches high surround station.

Marks.—Observed station is center point of triangle on standard cement monument.

	°	'	"	
"North Beach Life-Saving Station" (S 3° 33' W).....	0	00	00	3¾ miles.
North Beach Life-Saving Station flagstaff.....	0	15	--	3¾ miles.
Tangent to "Indian Graveyard Point".....	36	44	--	1 mile.
Crab-apple tree.....	64	--	--	70 yards.
Southerly chimney of stone house.....	70	15	--	½ mile.
Left end of grove of crab-apple trees.....	118	--	--	25 yards.
Dark brown house.....	191	--	--	1½ miles.
"Ocean City Water Tower".....	208	10	--	6¼ miles.
Chimney on Baker barn.....	199	19	--	4¾ miles.
Chimney on Baker house.....	199	41	--	4¾ miles.
Tabor house near Ocean City bridge.....	204	58	--	6¾ miles.

MUD.

General locality.—Eastern shore of lower Sinepuxent Bay, about two-thirds way from bay to ocean and 1 mile east-southeast of Sandy Point. (See Chart No. 13.)

Immediate locality.—Observed station is on sandy ground about 3 feet above high water, 60 yards west-northwest from top of a sand dune, 100 yards east of head of a small, narrow inlet from Sinepuxent Bay, and 110 yards east-southeast of a line of Life-Saving Service telephone poles which pass about 18 yards to the east of the wagon trail. Cement monument marking reference station is 18.84 meters N 57° 54' W of observed station. No other permanent reference objects near station.

Marks.—Observed station is a nail in a stub flush with the sand. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"North Beach Life-Saving Station" (S. 21° 39' W).....	0	00	00	3¼ miles.
Telephone pole.....	49	01	--	150 yards.
Southerly chimney of storehouse.....	78	50	--	1½ miles.

Survey of Oyster Bars, Worcester County, Md.

	°	'	"	
Telephone pole.....	83	07		110 yards.
REFERENCE STATION.....	100	26	50	18.84 meters.
Northerly end of ridge of roof of large barn.....	104	09		1¾ miles.
"Longwells Windmill".....	108	26		1½ miles.
Top point of four-sided roof.....	108	27		1⅝ miles.
Chimney on southerly end of long building.....	119	05		1¾ miles.
Telephone pole.....	120	29		125 yards.
Near chimney of brick house.....	139	44		2 miles.
"Ocean City Water Tower".....	180	56	20	6½ miles.

INGRAYA.

General locality.—Western shore of Sinepuxent Bay, on easterly side of Sinepuxent Neck, on point known locally as Indian Graveyard. (See Chart No. 13.)

Immediate locality.—Observed station is about 5 feet above high water, 55 yards north of nearest shore, 180 yards west of extreme end of point near bushes, and 80 yards east of where a ditch coming from the northward turns to westward. Two trees, each about 75 yards distant, are located on the line of the ditch.

Marks.—Observed station is center point of triangle on standard cement monument buried with top 14 inches below surface of ground.

References.—

"North Beach Life-Saving Station" (S 12° 25'	°	'	"	
E).....	0	00	00	2¾ miles.
Tangent to Green Point.....	42	19		½ mile.
Corner of ditch.....	109	10		80 yards.
Tree, 8 inches diameter.....	118	20		75 yards.
Tree, 8 inches diameter.....	162	24		80 yards.
Near chimney of 2½-story house (Hawks Nest).....	216	54		¾ mile.
"Longwells Windmill".....	219	50		1½ miles.
Tangent of Sandy Point.....	239	43		1¼ miles.
Bushes to east of end of point.....	299	--	--	180 yards.

SALT.

General locality.—Eastern shore of lower Sinepuxent Bay, about two-thirds way from bay to ocean and 1½ miles south-southeast of Sandy Point. (See Chart No. 13.)

Immediate locality.—Observed station is on sand and marsh beach land about 3 feet above high water, 105 yards east by south of line of poles of Life-Saving Service telephone line, and 175 yards east of a small creek known as "Jones Salt Works Drain." No permanent objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

"North Beach Life-Saving Station" S 20°	°	'	"	
36' W).....	0	00	00	2 miles.
North Beach Life-Saving Station flagstaff.....	0	14	20	2 miles.
Telephone pole.....	50	36	--	175 yards.
Telephone pole.....	72	36	--	135 yards.
Jones Salt Works Drain.....	80	--	--	175 yards.
Telephone pole.....	111	48	--	135 yards.
Left chimney of stone house.....	121	44	--	1¾ miles.
Telephone pole.....	137	07	--	200 yards.
"Longwells Windmill".....	141	23	--	2 miles.
Center of roof of white house.....	141	44	--	2½ miles.
Near chimney of 2½-story house.....	150	21	--	4½ miles.
"Ocean City Water Tower".....	182	07	40	7¾ miles.

NORTH BEACH LIFE-SAVING STATION.

General locality.—Atlantic coast side of strip of beach land between lower Sinepuxent Bay and the ocean. (See Charts Nos. 13 and 14.)

Immediate locality.—Observed station is on lookout cupola on the North Beach Life-Saving Station. This cupola is a gable-roof structure on a gable-roof 2½-story house.

Marks.—Observed station is a black and white 4 by 4 inch pole secured temporarily to the exact middle of ridge of gable roof of lookout cupola.

References.—None necessary.

BIRCH.

General locality.—Southern part of Sinepuxent Neck, between Sinepuxent Bay and Newport Bay, about ½ mile north-northwest of South Point. (See Charts Nos. 13 and 14.)

Immediate locality.—Observed station is on the northwest and higher of two knolls about 20 feet above high-water mark, 600 yards east of Island Point, 200 yards northeast of shore of upper Chincoteague Bay, 75 yards east-southeast of where a ditch and fence meet, and about 400 yards southwest of a house and barn.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Guilberts Cupola" (S 48° 09' W)-----	0	00	00	6¾ miles.
Chimney on left of a small house-----	12	13	--	4¾ miles.
Nail in blaze in walnut tree (20 inches diameter)-----	25	14	--	28.61 meters.
Chimney on black roof of white house-----	28	46	--	4¼ miles.
"Handys Hammock"-----	34	41	30	3 miles.
Cedar tree-----	41	39	--	80 yards.
Jones windmill-----	47	27	--	3½ miles.
Nail in blaze in walnut tree-----	66	33	40	25.52 meters.
Chimney of house near "Newport"-----	83	50	--	2½ miles.
Holly tree-----	156	57	--	150 yards.
Cedar tree near Birch farm buildings-----	184	58	--	300 yards.
Chimney of Birch farm house-----	192	32	--	300 yards.
Cedar tree-----	229	57	--	195 yards.
Chimney of hotel near "North Beach Life-Saving Station"-----	259	49	--	2½ miles.
Nail in blaze in walnut tree-----	341	34	--	12.72 meters.

NECK.

General locality.—Northeastern shore of Newport Bay, on easterly side of Newport Neck between Greys Inlet and Spence Cove. (See Chart No. 13.)

Immediate locality.—Observed station is on marsh land about 400 yards northeast of Knot Point, 100 yards north from shore of Spence Cove, 50 yards northwest of small marsh inlet, and 10 yards south of edge of a prominent grove of old oaks. There are bushes between the station and the oak grove. Cement monument marking reference station is 12.72 meters N 7° 23' W from observed station.

Marks.—Observed station is center point of triangle on standard cement monument. Reference station is center point of triangle on standard cement monument. (NOTE.—Top disconnected, but re cemented.)

References.—

	°	'	"	
"Handys Hammock" (S 53° 53' W)-----	0	00	00	3 miles.
Tall water bushes-----	17	--	--	75 yards
House behind bushes-----	17	33	--	4½ miles.
Left chimney of large house-----	29	37	--	2¾ miles.
Chimney of 1½-story white house-----	43	48	--	1¼ miles.
Left edge of oak grove-----	81	14	--	25 yards.
Nail in blaze of persimmon tree (3 inches diameter)-----	100	36	50	12.24 meters

Survey of Oyster Bars, Worcester County, Md.

	°	'	"	
Nail in blaze in oak tree (12 inches diameter).....	117	35	30	25.28 meters.
REFERENCE STATION.....	118	43	40	12.72 meters.
Nail in blaze in oak tree.....	173	04	--	17.88 meters.
Chimney of house in woods.....	216	32	--	$\frac{3}{4}$ mile.
Left chimney of large house.....	277	26	--	1 mile.
Tangent of marsh.....	253	07	--	$\frac{3}{4}$ mile.
Right tangent of Island Point.....	304	29	--	1 $\frac{1}{2}$ miles.
Tangent of marsh point.....	334	02	--	$\frac{1}{4}$ mile.

NEWPORT.

General locality.—Northwestern shore of Newport Bay on easterly side of elevated land known as Cropper Island. (See Chart No. 13.)

Immediate locality.—Observed station is on elevated tilled land about 5 feet above high-water mark, 200 yards west of mouth of marsh creek in bay shore, and 150 yards south of the only house on the island. It is near east edge of tilled land, about 70 yards west from edge of marsh. The tilled and marsh land is separated by a strip of land covered with trees.

Marks.—Observed station is center point of triangle on standard cement monument.

	°	'	"	
<i>References.</i> —				
"Neck" (S 86° 10' E).....	0	00	00	1 $\frac{1}{2}$ miles.
A house.....	22	42	--	2 miles.
Chimney of Birchs house.....	32	29	--	2 $\frac{1}{2}$ miles.
Walnut tree (24 inches diameter).....	83	53	--	70 yards.
Three trees.....	94	--	--	150 yards.
Left tangent of point of land.....	115	07	--	1 mile.
New barn.....	129	06	--	2 $\frac{1}{2}$ miles.
Chimney on house.....	133	39	--	1 $\frac{1}{2}$ miles.
Chimney on left end of house.....	158	36	--	1 mile.
Thorn bushes.....	171	44	--	150 yards.
Chimney on house.....	266	57	--	150 yards.
Double walnut tree.....	297	41	--	250 yards.
Well sweep.....	214	11	--	200 yards.

HANDYS HAMMOCK.

General locality.—Western shore of upper end of Chincoteague Bay and western side of entrance to Newport Bay on solid land partly surrounded by marsh known as Handys Hammock. (See Charts Nos. 13 and 14.)

Immediate locality.—Observed station is on a sand knoll about 10 feet above high water and 140 yards west-northwest from the extreme end of the narrow point on which it is situated. It is about 35 yards west of another short point, 30 feet south-southwest of shore at a sand beach, 20 yards north of a thorn bush and 50 yards north-northwest of a small pool 20 feet square.

Marks.—Observed station is center point of triangle on standard cement monument.

	°	'	"	
<i>References.</i> —				
"North Beach Life-Saving Station" S 82° 13' E).....	00	00	00	5 miles.
North Beach Life-Saving Station flagstaff.....	00	14	--	5 miles.
Left edge of woods beyond Kelleys Point.....	106	39	--	2 $\frac{1}{4}$ miles.
Myrtle tree.....	115	42	--	50 yards.
Chimney on left end of large white house.....	131	57	--	1 $\frac{3}{4}$ miles.
Chimney right end of another large white building.....	136	48	--	2 $\frac{1}{4}$ miles.
Center of large white house.....	146	42	--	1 $\frac{1}{2}$ miles.
Right end of new barn roof.....	178	12	--	1 $\frac{1}{2}$ miles.
Windmill.....	221	42	--	$\frac{1}{2}$ mile.

	°	'	"	
Chimney of house with two piazzas.....	224	17	--	1/2 mile.
Chimney of large unpainted house.....	251	18	--	1 mile.
Middle clump of 12 persimmon trees.....	267	35	--	50 yards.
Chimney on near end of large white house.....	289	48	--	2 1/4 miles.
Tangent to South Point.....	354	31	--	3 miles.

BEACON CLUMPS.

General locality.—Easterly side of upper Chincoteague Bay, on the southern and larger of the two small marsh islands called Beacon Clumps. (See Chart No. 14.)

Immediate locality.—Observed station is on a small marsh island covered at extreme high water. It is situated about 35 yards south of shore, 22 yards west of shore, 28 yards north of shore, and 75 yards east of shore.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Guilberts Cupola" S 78° 50' E).....	0	00	00	4 1/2 miles.
Modern house being constructed.....	2	58	--	4 1/2 miles.
Silo building.....	3	18	--	4 1/2 miles.
Chimney of Jones house on Newport Bay.....	51	50	--	6 1/4 miles.
Near end of roof of house on South Point.....	86	18	--	5 1/2 miles.
First tree near North Beach Life-Saving Station.....	103	21	--	5 miles.
North Beach Life-Saving Station flagstaff.....	111	13	--	5 miles.
"North Beach Life-Saving Station".....	111	15	20	5 miles.
Other Beacon Clump.....	116	--	--	1/4 mile.
Green Run Inlet Life-Saving Station lookout.....	255	46	--	3 1/2 miles.
Right end of Green Run Inlet woods.....	271	31	--	3 1/2 miles.
Between two chimneys on cream-colored house.....	339	--	--	5 1/2 miles.

TURNAGAIN.

General locality.—Eastern shore of Chincoteague Bay, on main land marsh about 1 mile southeast of Whittington Point. (See Charts Nos. 14 and 15.)

Immediate locality.—Observed station is on marsh land awash at high water, about 75 yards south from shore, 55 yards east from shore, and about 83 yards west from shore of a small bay. A creek runs nearly around this piece of marsh, but does not make an island of it. No permanent reference marks near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Pope Island Life-Saving Station" (S 15° 22' W).....	0	00	00	4 3/4 miles.
Point of land.....	18	02	--	1/4 mile.
Point of land.....	34	23	--	2 miles.
Point of marsh.....	91	11	--	1/8 mile.
Point of land.....	97	54	--	1/4 mile.
Point of land.....	164	16	--	1/4 mile.
Point of this marsh.....	194	28	--	1/8 mile.
Beginning of woods.....	251	41	--	1 mile.
Cut in top of woods.....	281	41	--	3/4 mile.
End of woods.....	313	19	--	1/2 mile.
Sand dune behind woods.....	330	44	--	1 3/4 miles.
Clump of trees.....	336	32	--	1 3/4 miles.
Duck blind.....	355	44	--	1 mile.

GREEN RUN INLET LIFE-SAVING STATION FLAGSTAFF.

General locality.—Atlantic coast, about 18 miles south-southwest of Ocean City and about 15 miles northeast by north of "Assateague Light." (See Charts Nos. 14 and 15.)

Immediate locality.—Observed station is detached flagstaff with a topmast belonging to Green Run Inlet Life-Saving Station.

Marks.—Observed station is center of flagstaff.

References.—None necessary.

LANDLET.

General locality.—Western shore of Chincoteague Bay, about $2\frac{1}{4}$ miles south of Snow Hill Landing, on point of land known locally as Watermelon Point. (See Chart No. 14.)

Immediate locality.—Observed station is on a small sandy island surrounded by marsh land and about 20 yards west of shore. This so-called island is the only hard land on the marsh point and is about $\frac{1}{8}$ mile to the east of the nearest solid land.

Marks.—Observed station is center point of triangle on standard cement monument buried with top 2 inches below surface of ground.

References.—

	°	'	"	
"Guilberts Cupola" (N 7° 05' E)-----	0	00	00	$2\frac{1}{4}$ miles.
Chimney of white house-----	8	02		4 miles.
Right of Green Run woods-----	111	29		5 miles.
"Pope Island Life-Saving Station"-----	151	52		$6\frac{3}{4}$ miles.
Four trees on Martin Point-----	185	21		1 mile.
Left of clump of trees called Purnell Hammock.	197	23		$\frac{3}{4}$ mile.
House-----	217	55		6 miles.
Large tree-----	245	16		$\frac{1}{4}$ mile.
Chimney of white house-----	264	00		$\frac{3}{4}$ mile.
Cedars on property line-----	275	50		$\frac{3}{8}$ mile.
Chimney on middle of house-----	316	13		1 mile.
Chimney outside of house-----	328	08		$1\frac{1}{4}$ miles.
Near end of large barn-----	342	05		$1\frac{1}{4}$ miles.

GUILBERTS CUPOLA.

General locality.—Western shore of Chincoteague Bay, close to Snow Hill Landing. (See Chart No. 14.)

Immediate locality.—Observed station is on a large mansion house located about 100 yards north-west of the land end of Snow Hill Landing.

Marks.—Observed station is center point of top of cupola.

References.—None necessary.

RICKS.

General locality.—Western shore of upper Chincoteague Bay, on point of marsh land about $1\frac{1}{2}$ miles northeast of Snow Hill Landing called Ricks Point. (See Chart No. 14.)

Immediate locality.—Observed station is on a marsh point about 20 yards west from a pool making into marsh, 20 yards south from shore and 90 yards north of shore.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Green Run Inlet Life-Saving Station flag-staff" (S 31° 48' E)-----	0	00	00	$6\frac{1}{4}$ miles.
Green Run Inlet Life-Saving Station cupola--	0	08	05	$6\frac{1}{4}$ miles.
Right tangent of Green Run woods-----	7	45		7 miles.
Right tangent of pool-----	32	18		20 yards.
Right tangent of Martin Point-----	52	30		$4\frac{1}{2}$ miles.
Center of Purnell Hammock-----	57	22		$4\frac{1}{2}$ miles.
Left tangent of point-----	61	07		$\frac{1}{4}$ mile.
Guilbert windmill-----	83	26		$1\frac{1}{2}$ miles.

	0	'	"	
Chimney near end of house.....	118	37	--	1 mile.
To first of four points of land or line.....	189	54	--	100 yards.
Windmill on red tank.....	195	32	--	2 miles.
Center of thick woods.....	201	09	--	1 ½ miles.
Right tangent of Kelleys Point.....	231	01	--	2 miles.
North Beach Life-Saving Station flagstaff	279	42	20	6 ¼ miles.
Left tangent of pool.....	293	51	--	40 yards.
Left tangent of Robins marsh.....	329	25	--	¾ mile.
"Beacon Clumps".....	332	26	25	3 ¾ miles.
Mouth of pool.....	340	26	--	30 yards.
Right tangent of Robins marsh.....	349	02	--	¾ mile.

MARYLAND-VIRGINIA LIFE-SAVING STATION BEACH).

General locality.—Atlantic coast near ocean beach, on boundary line between Maryland and Virginia and about ¼ mile north-northeast of Pope Island Life-Saving Station. (See Chart No. 15.)

Immediate locality.—Observed station is on marsh and sand land about 230 yards northwest of high-water mark on beach, 75 yards west of top of sand dunes on inner edge of beach, and about 50 yards northwest of the Life-Saving Service telephone line which runs along the beach in midst of bushes at this point.

Marks.—Observed station is the center of an old granite monument (said to have been established many years ago) which marks the boundary between Maryland and Virginia. Top of monument is 6 by 6 inches square and projects 18 inches above the ground. The top is marked with an east-and-west line from corner to corner and the letters "M" and "V" to indicate the Maryland and Virginia sides of the boundary, respectively.

References.—

	S	20°	0	'	"	
"Pope Island Life-Saving Station" 12' W).....	0	00	00	--	--	¼ mile.
Left peak of barn roof.....	5	39	--	--	--	¼ mile.
"Maryland-Virginia Boundary, Pope Island".....	63	55	--	--	--	¾ mile.
Chimney on old house on Pope Island.....	68	41	--	--	--	¾ mile.
Pine tree in cut toward "Mill".....	92	55	--	--	--	¼ mile.
First telephone pole from end of bushes.....	195	52	--	--	--	190 yards.
Fifth telephone pole from end of bushes.....	205	25	--	--	--	110 yards.
Sixth telephone pole from end of bushes.....	263	06	--	--	--	52 yards.
Seventh telephone pole from end of bushes fourth from life-saving station).....	330	58	--	--	--	88 yards.
Eighth pole signal pole at life-saving station).....	357	03	--	--	--	¼ mile.

MARYLAND-VIRGINIA (POPE ISLAND).

General locality.—Western side of Pope Bay on eastern side of Pope Island, about ¼ mile north-east of its southern extremity and on boundary between Maryland and Virginia. (See Chart No. 15.)

Immediate locality.—Observed station is on hard land 3 feet above high-water mark, about 10 yards west of shore, 85 yards south of an old house, and 10 yards east of bushes.

Marks.—Observed station is the center of an old granite monument projecting 18 inches above ground which marks the boundary between Maryland and Virginia. Top of monument is cut in a square 6 by 6 inches with an east-and-west line from corner to corner and the letters "M" and "V" to indicate the Maryland and Virginia sides of the boundary, respectively.

References.—

	0	'	"	
"Pope Island Life-Saving Station" (S 73° 45' E).....	0	00	00	¼ mile.
Right tangent of shanty.....	15	32	--	¾ mile.
Right tangent of boathouse.....	40	22	--	¼ mile.
Center of small island.....	101	--	--	¼ mile.
Tangent of Pope Island.....	113	38	--	¼ mile.

Survey of Oyster Bars, Worcester County, Md.

	o	'	"	
Two large pines.....	139	07	--	¼ mile.
Left of bushes.....	191	56	--	10 yards.
Near corner of old house.....	283	08	--	85 yards.
Point of land near life-saving station wharf.....	336	22	--	¼ mile.
Drill pole near life-saving station.....	355	29	--	½ mile.

POPE ISLAND LIFE-SAVING STATION (VIRGINIA).

General locality.—Atlantic coast, on Pope Island Beach, about $9\frac{3}{4}$ miles northeasterly from "Assateague Light." (See Chart No. 15.)

Immediate locality.—Observed station is on the main building of the Pope Island Life-Saving Station, which is a gable roofed $1\frac{1}{2}$ -story wooden structure with a square lookout cupola. Pointed cap piece of cupola supports a weather vane in the form of a fish.

Marks.—Observed station is center of weather-vane spindle.

References.—None necessary.

WILDCAT (VIRGINIA).

General locality.—Northerly end of Chincoteague Island, on westerly side of Assateague Bay. (See Chart No. 15.)

Immediate locality.—Observed station is on marsh land, about $\frac{1}{4}$ mile south of upper end of island, known locally as Wildcat Point. It is inshore about 100 yards northwest of mouth of small marsh drain emptying into Assateague Bay. The marsh creek or drain makes a decided turn about 12 yards south of station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Assateague Light" (S $26^{\circ} 06'$ W).....	0	00	00	$5\frac{1}{4}$ miles.
Right tangent of woods.....	29	48	--	1 mile.
"Killick Shoal Light".....	30	37	40	$4\frac{1}{4}$ miles
First cedar.....	44	52	--	$1\frac{1}{2}$ miles.
Clump of cedars.....	66	--	--	$1\frac{1}{4}$ miles.
A marshy island.....	100	--	--	$1\frac{1}{4}$ miles.
Right tangent of marshy island.....	130	14	--	$1\frac{1}{4}$ miles.
Left tangent of Ragged Point.....	172	08	--	1 mile.
Shanty on Ragged Point.....	176	42	--	1 mile.
First tree on Ragged Point.....	209	11	--	1 mile.
Second tree on Ragged Point.....	210	41	--	1 mile.
Sand dune.....	259	--	--	1 mile.
Smith Hammock sand dune.....	323	--	--	$1\frac{1}{4}$ miles.
Middle of boathouse on beach.....	335	52	--	3 miles.
A marsh tump.....	340	--	--	$\frac{3}{4}$ mile.

ASSATEAGUE LIGHT (VIRGINIA).

General locality.—Southerly part of Assateague Island, seacoast of Virginia, about $2\frac{1}{2}$ miles from its southwesterly point. (See progress map.)

Immediate locality.—Red tower, 154 feet above sea level and 129 feet above its own base, known as Assateague Light-House.

Marks.—Observed station is center of black lantern.

References.—None necessary.

KILLICK SHOAL LIGHT (VIRGINIA).

General locality.—Southerly end of Chincoteague Bay, on Killick Shoals, off entrance of Chincoteague Channel. (See progress map.)

Immediate locality.—Screw pile structure known as Killick Shoal Light-House.

Marks.—Observed station is center of black lantern.

References.—None necessary.

CHESTER (VIRGINIA).

General locality.—Southern and western shores of Chincoteague Bay, about $\frac{1}{2}$ mile south of shore of bay and $\frac{1}{4}$ mile east of solid land known locally as Mosquito Point Farm. (See progress map.)

Immediate locality.—Observed station is on a mound of dry land surrounded by marsh, known locally as Fox Hill. It is on the highest point and near the apex of the mound, which is V-shaped and about 15 feet above high water at the station. The mound gradually falls off to the level of the marsh from the station to the ends of the V, which are both about 150 yards distant, and at the extreme apex, which is about 25 yards to the north. Reference station is 5.82 meters N 80° 51' W of the observed station.

Marks.—Observed station is center of tile pipe surrounded by cement with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—	o	'	"	
"Assateague Light" (S 59° 59' E)-----	0	00	00	5 $\frac{1}{4}$ miles.
Tower on Wallops Beach Life-Saving Station-----	60	44	--	5 $\frac{1}{2}$ miles.
Cupola of barn-----	135	53	--	$\frac{3}{4}$ mile.
REFERENCE STATION-----	150	08	10	5.82 meters.
"Grace M. E. Church"-----	274	27	--	5 $\frac{1}{4}$ miles.
"Killick Shoal Light"-----	333	30	--	3 $\frac{1}{2}$ miles.
West spire of Union Baptist Church at Chincoteague-----	348	15	--	4 miles.

LONG POINT (VIRGINIA).

General locality.—Western shore of lower Chincoteague Bay, near Long Point, about $\frac{1}{2}$ mile east of Franklin City. (See Chart No. 15.)

Immediate locality.—Observed station is on marsh land about 40 yards from end of point of mainland, 30 yards southwest of shore and 20 yards north of shore. A small marsh island is located about 200 yards east of the station, which was once a part of the mainland and known as Long Point. Reference station is 11.81 meters N 42° 37' W of the observed station.

Marks.—Observed station is center of tile pipe set in cement with top flush with the ground. Reference station is center point of triangle on standard cement monument.

References.—	o	'	"	
"Mill" (N 38° 07' E)-----	0	00	00	4 miles.
"Assateague Light"-----	133	26	15	6 $\frac{3}{4}$ miles.
"Killick Shoal Light"-----	144	32	25	4 $\frac{1}{4}$ miles.
End of wharf at Franklin City-----	222	33	--	$\frac{1}{2}$ mile.
M. P. Church-----	252	32	30	1 mile.
Grace M. E. Church (tall spire)-----	259	07	30	$\frac{3}{4}$ mile.
Grace M. E. Church (short spire)-----	259	38	35	$\frac{3}{4}$ mile.
REFERENCE STATION-----	279	16	00	11.81 meters.

GRACE M. E. CHURCH (VIRGINIA).

General locality.—Western shore of lower Chincoteague Bay, about $\frac{1}{2}$ mile northwest of railway wharf at Franklin City. (See Chart No. 15.)

Immediate locality.—Observed station is the taller of two towers on church known as Grace M. E. Church.

Marks.—Observed station is center of pointed tower or spire.

References.—None necessary.

MONEY (VIRGINIA).

General locality.—Western shore of lower Chincoteague Bay, about 1 mile west-northwest of Long Point, on northern edge of town of Greenbackville, and just south of Maryland-Virginia boundary. (See Chart No. 15.)

Survey of Oyster Bars, Worcester County, Md.

Immediate locality.—Observed station is about 70 yards northeast of railway on a sandy rise of ground about 15 feet above level of track. It is about 25 yards south of the Maryland-Virginia boundary and 30.43 meters S 38° 28' E of broken stone boundary monument. At the station, "Assateague Light" shows almost tangent to third house north of Grace M. E. Church.

Marks.—Observed station is center point of triangle on standard cement monument buried with top 30 inches below surface of ground

References.—

	°	'	"	
"Grace M. E. Church" (S 21° 23' E)-----	0	00	00	250 yards.
"Assateague Light"-----	7	46	49	7¼ miles.
M. P. Church-----	65	46	20	¼ mile.
Center chimney on square house-----	117	11	--	100 yards.
"Maryland-Virginia Railroad)" (boundary stone)-----	162	55	26	30.43 meters.
"Long Point"-----	324	45	43	1 mile.
Left chimney of two close together-----	330	48	--	150 yards.
Small tower Greenbackville Church-----	359	00	30	250 yards.

MARYLAND-VIRGINIA (RAILROAD).

General locality.—Western shore of lower Chincoteague Bay, inland about 1 mile west-northwest of Long Point, on boundary line between Maryland and Virginia. (See Chart No. 15.)

Immediate locality.—Observed station is about 80 yards northeast of railroad on a sandy rise of ground about 15 feet above level of track. It is on the edge of an excavation in this sand hill and is likely to be undermined any time by the carting away of sand for building purposes. The standard cement monument marking triangulation station "Money" is buried with its top 30 inches below surface of ground 30.43 meters S 38° 28' E true from station.

Marks.—Observed station is the center of a square-top granite monument projecting 18 inches above ground which marks the boundary between Maryland and Virginia. Top of monument when visited in December, 1907, was broken loose and resting on the undisturbed part of the stone buried in the ground. This top was cut in a square 6 by 6 inches with an east-and-west line from side to side and the letters "M" and "V" to indicate the Maryland and Virginia side of the boundary, respectively

References.—None observed.

MILL.

General locality.—Western shore of Chincoteague Bay, on the northern part of Mill Island. (See Chart No. 15.)

Immediate locality.—Observed station is the highest point of the island, on a hill about 20 feet above high water which is located about ½ mile southwest of the upper end of the island. It is about 40 yards east by south of an abandoned house and sheds and about ¼ mile north of another abandoned house.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Assateague Light" (S 8° 59' W)-----	0	00	00	10 miles
Right tangent of Chincoteague Island-----	11	54	--	10 miles.
Knoll on this island-----	15	--	--	¾ mile.
Tree (8 inches diameter)-----	21	46	--	40 yards.
Tree (8 inches diameter)-----	42	20	--	70 yards.
Tree (18 inches diameter)-----	54	27	--	39.30 meters.
Near corner of old house-----	62	43	40	36.88 meters.
Next corner of old house-----	70	28	--	37.64 meters.
Cupola on large house-----	138	25	--	1½ miles.
Chimneys on white house-----	139	11	--	2 miles.
Near end of large barn-----	186	47	--	4½ miles.
"Landlet" and right of trees at Purnell Hammock-----	195	10	--	3¾ miles.
Dead tree and 2 cedars-----	213	52	--	¼ mile.

	°	'	"	
Right tangent of Assacorkin Island.....	235	34	--	¾ mile.
Left of "Green Run" woods.....	238	40	--	6¾ miles.
"Pope Island Life-Saving Station".....	286	05	--	4¾ miles.
Left tangent of first building on Ragged Point.....	323	39	--	4½ miles.
Left tangent of Chincoteague Island.....	341	06	--	5 miles.
Chimney of old house.....	349	27	--	¼ mile.

• TIZZ.

General locality.—Western side of Chincoteague Bay on Tizzard Island. (See Chart No. 15.)

Immediate locality.—Observed station is on the highest point on the island, about 15 feet above high water, about ¼ mile from extreme southeastern point of island, and about 75 yards north of shore line of island.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Assateague Light" (S 6° 35' W).....	0	00	00	12 miles.
Right of woods at Chincoteague.....	10	38	--	15 miles.
Smoke pipe of shanty.....	18	52	--	3 miles.
Chimney on first house at Stockton.....	23	27	--	3¼ miles.
Church steeple at Franklin City.....	28	23	--	5¼ miles.
Church steeple, Greenbackville.....	30	02	30	5½ miles.
Two chimneys on gambrel roof.....	40	--	--	1¾ miles.
Near chimney of white house.....	101	25	--	2¼ miles.
Near chimney of another white house.....	106	53	--	2¼ miles.
Chimney on large unpainted barn.....	113	07	--	2 miles.
Two chimneys on large house.....	119	19	--	3 miles.
Chimney of yellow building.....	165	59	--	4 miles.
Large white barn.....	199	58	--	4 miles.
Purnell Hammock.....	213	--	--	3¼ miles.
Green Run Inlet Life-Saving Station flagstaff.....	256	55	20	7½ miles.
"Pope Island Life-Saving Station".....	299	34	50	5¾ miles.
Left tangent Assacorkin Island.....	316	14	--	1½ miles.
Left tangent of Mill Island.....	325	17	--	1½ miles.
Left of woods at Chincoteague.....	350	52	--	12 miles.

BOUNDARIES OF OYSTER BARS.

EXPLANATION.

The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the designation and employment by the Department of Commerce and Labor of such officers, experts, and other technically qualified persons "as may be necessary to cooperate with the Maryland State Board of Shell Fish Commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland." The oyster laws of Maryland provide that the Maryland Shell Fish Commissioners, with the aid of such persons as may be designated by the Government, shall proceed "to have laid out, surveyed, and designated on the said charts the natural beds and bars, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of the natural beds, bars, and rocks as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars, and rocks, as shown by a delineation on the maps and charts." The oyster laws of Maryland also provide in another section that there shall "be made a true and accurate survey of the natural oyster beds, bars, and rocks * * * with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey."

Under the provisions of the laws quoted above the State of Maryland, in cooperation with the Department of Commerce and Labor, must define the boundaries of the natural oyster bars "as accurately as practicable" and also "with reference to fixed and permanent objects on the shore, giving courses and distances." The requirement of "as accurately as practicable" is easily fulfilled by definition of the location of the corners of the oyster bars by latitude and longitude. In fact, this method is probably the most satisfactory and accurate one that could be used for all purposes of legal definition or for relocation of the oyster-bar boundaries by competent engineers. Therefore the additional requirement of "giving courses and distances" is superfluous and is only fulfilled in the published definitions on account of the specific provisions of the law making it compulsory. This part of the description of boundaries has involved an immense amount of extra computations in order to prevent technical discrepancies between the latitude and longitude of a corner of an oyster bar and its distance and bearing from objects on shore of known latitude and longitude without adding anything to the accuracy and very little to the convenience of practical use of the descriptions of the oyster-bar boundaries.

As provided by law the boundaries of the oyster bars are all straight lines, but in the work already completed they have inclosed areas of all shapes from triangles to complicated 14-sided figures, and of all sizes from 4 acres to 7,548 acres. The sides

have varied in length from 93 to 7,529 yards, and in some cases the corners of the boundaries have been practically at the triangulation stations from which they are located, while in other instances they were over 13,600 yards from the landmarks most available for the purpose of fixing their position.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made and the magnitude of the work with the consequent need of fixed and uniform methods, have made the problem of describing the boundaries one of considerable difficulty and great importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the Commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and future.

METHOD OF DESCRIBING BOUNDARIES.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in each county.

Title.—At the top of each tabular form is given the legal name of the oyster bar to be described, and the one by which it is known and designated in the published oyster records and on the oyster charts. The adopted name of the oyster bar is the one used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission; and when there was no local name in common use a name was selected from one of the prominent features of the vicinity that would naturally suggest the section of the waters where the oyster bar was located.

Underneath the name, in parentheses, is given the general locality of the oyster bar and the serial number of the "Maryland Oyster Chart" on which its legal boundaries are shown.^a

First column.—This column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar; but where a corner of one oyster bar is identical with the corner of the boundaries of one or more other oyster bars only the number of the corner of the oyster bar being described in the table is given in this column.

Second and third columns.—These two columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definition of the location of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations

^a These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

of the Survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural or other causes.

Fourth and fifth columns.—These two columns, under the general heading of "True bearing"^a and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

Sixth column.—This column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

Seventh column.—This column, under the heading of "U. S. C. & G. S. triangulation station,"^b gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication under the heading of "Descriptions of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars: One, to determine whether the buoys marking the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

(1) *Triangulation.*—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those

^a The mean magnetic variation for Worcester County was $5^{\circ} 55'$ west of north in 1909 and increasing at the rate of $3\frac{1}{2}'$ yearly.

^b Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer having a single sextant, the three-point method can be used if the two angles determining the position of a buoy are first derived from the "Forward" bearings given in the tabular forms describing the boundaries of the oyster bars. For example, take "South Point" bar, which is the first one described in this publication, and assume that "Corner No. 3," is to be examined as to its position. The angle between the two landmarks "Birch" and "Neck" as determined from right to left from the forward bearings from this corner is $59^{\circ} 11'$ and the angle between "Neck" and "Newport" is $49^{\circ} 44'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where the angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative position that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the

protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant then the other until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic locations of points are attained; in fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the Commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State fishery force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer takes compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,^a and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks for which the bearings are published have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used by getting their bearings directly from the chart by parallel rulers or a protractor and then applying them in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding "back" bearing (corrected for local magnetic declination) given in the fourth column of the tables opposite the "corner" in question, and the direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

^a The mean magnetic variation for Worcester County is 5° 55' west of north in 1909 and increasing at the rate of 3½' yearly.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from this "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit, and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

SOUTH POINT.

(Newport Bay—Charts Nos. 13 and 14.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	$^{\circ}$ $'$ $''$	$^{\circ}$ $'$ $''$	$^{\circ}$ $'$	$^{\circ}$ $'$	Yards.	
1	38 12 03.48	75 13 05.54	N 53 17 E	S 53 18 W	2683	Birch.
			N 19 15 E	S 19 16 W	4408	Neck.
			N 71 48 W	S 71 49 E	3082	Handys Hammock.
2	38 12 26.10	75 13 18.36	N 71 22 E	S 71 23 W	2628	Birch.
			N 27 50 E	S 27 50 W	3844	Neck.
			N 85 34 W	S 85 35 E	2595	Handys Hammock.
3	38 12 48.39	75 13 04.82	N 87 38 E	S 87 38 W	2133	Birch.
			N 28 27 E	S 28 27 W	3011	Neck.
			N 21 17 W	S 21 18 E	3024	Newport.
4	38 12 34.39	75 12 47.18	N 71 22 E	S 71 23 W	1753	Birch.
			N 17 12 E	S 17 12 W	3265	Neck.
			N 25 28 W	S 25 29 E	3644	Newport.

HANDYS HAMMOCK.

(Newport Bay—Charts Nos. 13 and 14.)

	$^{\circ}$ $'$ $''$	$^{\circ}$ $'$ $''$	$^{\circ}$ $'$	$^{\circ}$ $'$	Yards.	
1	38 12 06.72	75 14 10.98	N 69 00 E	S 69 01 W	4168	Birch.
			N 8 54 E	S 8 55 W	4275	Newport.
			N 54 17 W	S 54 17 E	1462	Handys Hammock.
2	38 12 08.22	75 14 20.24	N 70 45 E	S 70 47 W	4381	Birch.
			N 12 17 E	S 12 17 W	4270	Newport.
			N 49 31 W	S 49 31 E	1236	Handys Hammock.
3	38 12 23.50	75 14 26.40	N 77 49 E	S 77 51 W	4400	Birch.
			N 16 20 E	S 16 21 W	3811	Newport.
			N 69 41 W	S 69 41 E	828	Handys Hammock.
4	38 12 23.64	75 14 13.18	N 76 48 E	S 76 50 W	4046	Birch.
			N 11 09 E	S 11 10 W	3723	Newport.
			N 75 56 W	S 75 56 E	1164	Handys Hammock.

Survey of Oyster Bars, Worcester County, Md.

NEWPORT.

(Newport Bay—Charts Nos. 13 and 14.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 11 48.98	75 13 32.00	N 53 46 E N 4 27 W N 56 52 W	S 53 47 W S 4 27 E S 56 53 E	3538 4836 2656	Birch. Newport. Handys Hammock.
2	38 11 50.08	75 13 52.90	N 58 55 E N 2 10 E N 49 42 W	S 58 57 W S 2 10 W S 49 43 E	3981 4788 2187	Birch. Newport. Handys Hammock.
3	38 12 06.38	75 13 44.00	N 64 37 E N 0 45 W N 65 34 W	S 64 38 W S 0 45 E S 65 35 E	3512 4234 2092	Birch. Newport. Handys Hammock.
4	38 12 11.78	75 13 23.40	N 63 15 E N 8 28 W N 74 26 W	S 63 16 W S 8 29 E S 74 27 E	2938 4097 2546	Birch. Newport. Handys Hammock.

LAMBERTSON LANDING.

(Upper Chincoteague Bay—Chart No. 14.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 11 19.54	75 14 54.94	N 58 38 E N 80 24 W S 26 23 W	S 58 40 W S 80 24 E N 26 22 E	5926 2445 3350	Birch. Handys Hammock. Ricks.
2	38 11 48.19	75 15 08.00	S 16 02 W N 68 36 E N 12 35 E	N 16 02 E S 68 38 W S 12 36 W	4127 5808 1515	Ricks. Birch. Handys Hammock.
3	38 11 58.98	75 14 53.63	S 19 28 W N 70 44 E N 2 41 W	N 19 28 E S 70 46 W S 2 41 E	4593 5324 1115	Ricks. Birch. Handys Hammock.
4	38 11 46.83	75 14 34.34	N 64 22 E N 20 21 W S 27 27 W	S 64 24 W S 20 21 E N 27 26 E	5004 1625 4418	Birch. Handys Hammock. Ricks.
5	38 11 38.04	75 14 41.03	N 62 18 E N 12 01 W S 27 09 W	S 62 20 W S 12 01 E N 27 08 E	5296 1861 4073	Birch. Handys Hammock. Ricks.

ENNIS.

(Upper Chincoteague Bay—Chart No. 14.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 11 13.38	75 14 17.68	N 51 01 E N 20 49 W S 41 37 W	S 51 03 W S 20 50 E N 41 36 E	5234 2837 3735	Birch. Handys Hammock. Ricks.
2	38 11 38.04	75 14 41.03	N 62 18 E N 12 01 W S 27 09 W	S 62 20 W S 12 01 E N 27 08 E	5296 1861 4073	Birch. Handys Hammock. Ricks.

ENNIS—Continued.

(Upper Chincoteague Bay—Chart No. 14)—Continued.

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
3	38 11 46.83	75 14 34.34	N 64 22 E	S 64 24 W	5004	Birch.
			N 20 21 W	S 20 21 E	1625	Handys Hammock.
			S 27 27 W	N 27 26 E	4418	Ricks.
4	38 11 24.96	75 13 59.52	N 51 01 E	S 51 02 W	4613	Birch.
			N 33 25 W	S 33 25 E	2709	Handys Hammock.
			S 42 57 W	N 42 56 E	4349	Ricks.

TURPIN.

(Upper Chincoteague Bay—Chart No. 14.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 10 21.84	75 14 43.82	N 43 26 E	S 43 28 W	6929	Birch.
			N 4 05 W	S 4 05 E	4401	Handys Hammock
			S 59 25 W	N 59 24 E	2072	Ricks.
2	38 10 34.30	75 14 45.38	N 46 11 E	S 46 13 W	6660	Birch.
			N 3 55 W	S 3 55 E	3978	Handys Hammock.
			S 49 46 W	N 49 45 E	2283	Ricks.
3	38 10 26.78	75 14 27.84	N 41 44 E	S 41 46 W	6518	Birch.
			N 9 57 W	S 9 57 E	4288	Handys Hammock.
			S 61 04 W	N 61 03 E	2525	Ricks.

SANDY POINT.

(Upper Chincoteague Bay—Chart No. 14.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 09 51.26	75 14 32.04	N 6 36 W	S 6 36 E	5457	Handys Hammock.
			S 89 11 W	N 89 10 E	2099	Ricks.
			S 46 14 E	N 46 13 W	4828	Beacon Clumps.
2	38 09 56.78	75 14 40.00	N 4 32 W	S 4 32 E	5251	Handys Hammock.
			S 83 39 W	N 83 39 E	1897	Ricks.
			S 46 26 E	N 46 24 W	5105	Beacon Clumps.
3	38 10 08.48	75 14 36.78	N 5 54 W	S 5 54 E	4867	Handys Hammock.
			S 72 58 W	N 72 57 E	2063	Ricks.
			S 42 43 E	N 42 42 W	5325	Beacon Clumps.
4	38 10 05.78	75 14 22.98	N 9 59 W	S 9 59 E	5008	Handys Hammock.
			S 77 38 W	N 77 37 E	2395	Ricks.
			S 40 20 E	N 40 22 W	5014	Beacon Clumps.

Survey of Oyster Bars, Worcester County, Md.

ROBINS MARSH.

(Upper Chincoteague Bay—Chart No. 14.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 09 06.48	75 15 35.79	N 15 05 W S 83 42 W S 35 48 W	S 15 06 E N 83 41 E N 35 46 E	1539 2630 5328	Ricks. Guilberts Cupola. Landlet.
2	38 09 22.32	75 15 53.78	N 4 42 E S 68 56 W S 28 35 W	S 4 42 W N 68 55 E N 28 34 E	955 2287 5536	Ricks. Guilberts Cupola. Landlet.
3	38 09 35.39	75 15 42.96	N 22 19 W S 62 28 W S 62 31 E	S 22 19 E N 62 27 E N 62 29 W	552 2733 6060	Ricks. Guilberts Cupola. Beacon Clumps.
4	38 09 40.61	75 14 49.94	N 78 19 W S 69 26 W S 53 08 E	S 78 20 E N 69 25 E N 53 06 W	1656 4096 4955	Ricks. Guilberts Cupola. Beacon Clumps.
5	38 09 29.59	75 14 46.23	N 67 39 W S 74 50 W S 56 03 E	S 67 40 E N 74 48 E N 56 02 W	1860 4076 4659	Ricks. Guilberts Cupola. Beacon Clumps.
6	38 09 27.20	75 15 03.23	N 58 09 W S 74 11 W S 59 43 E	S 58 10 E N 74 09 E N 59 41 W	1493 3619 5000	Ricks. Guilberts Cupola. Beacon Clumps.
7	38 09 14.54	75 15 08.41	N 42 56 W S 80 30 W S 64 50 E	S 42 56 E N 80 28 E N 64 48 W	1658 3390 4923	Ricks. Guilberts Cupola. Beacon Clumps.

SCARBORO CREEK.

(Upper Chincoteague Bay—Chart No. 14.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 40.78	75 16 00.00	N 5 55 E N 73 38 W S 35 34 W	S 5 55 W S 73 37 E N 35 33 E	2365 2053 4249	Ricks. Guilberts Cupola. Landlet.
2	38 09 04.47	75 16 08.42	N 16 46 E S 82 48 W S 27 50 W	S 16 46 W N 82 49 E N 27 50 E	1623 1760 4812	Ricks. Guilberts Cupola. Landlet.
3	38 09 22.32	75 15 53.78	N 4 42 E S 68 56 W S 28 35 W	S 4 42 W N 68 55 E N 28 34 E	955 2287 5536	Ricks. Guilberts Cupola. Landlet.
4	38 09 06.48	75 15 35.79	N 15 05 W S 83 42 W S 35 48 W	S 15 06 E N 83 41 E N 35 46 E	1539 2630 5328	Ricks. Guilberts Cupola. Landlet.

SOUTHWEST.

(Upper Chincoteague Bay—Chart No. 14.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 32.04	75 15 26.63	N 13 41 W N 73 01 W S 46 45 W	S 13 41 E S 73 02 E N 46 44 E	2724 2988 4613	Ricks. Guilberts Cupola. Landlet.
2	38 08 32.11	75 15 38.94	N 6 50 W N 71 01 W S 43 47 W	S 6 50 E S 71 02 E N 43 46 E	2664 2676 4382	Ricks. Guilberts Cupola. Landlet.
3	38 08 47.04	75 15 30.98	N 13 52 W N 82 22 W S 41 26 W	S 13 52 E S 82 23 E N 41 25 E	2206 2767 4902	Ricks. Guilberts Cupola. Landlet.

PURNELL HAMMOCK.

(Middle Chincoteague Bay—Chart No. 14.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 06 06.82	75 16 59.60	S 77 09 E N 26 59 W S 53 51 W	N 77 07 W S 27 00 E N 53 49 E	5797 1947 5879	Turnagain. Landlet. Tizz.
2	38 06 11.34	75 17 15.40	S 76 39 E N 16 18 W S 50 04 W	N 76 37 W S 16 18 E N 50 02 E	6242 1649 5641	Turnagain. Landlet. Tizz.
3	38 06 15.60	75 17 13.42	S 75 15 E N 19 40 W S 49 19 W	N 75 13 W S 19 40 E N 49 17 E	6226 1528 5774	Turnagain. Landlet. Tizz.

BEEF CREEK.

(Middle Chincoteague Bay—Charts Nos. 14 and 15.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 51.48	75 17 52.41	N 13 05 E S 48 32 W S 28 23 W	S 13 05 W N 48 31 E N 28 23 E	2312 4455 6045	Landlet. Tizz. Mill.
2	38 05 54.26	75 17 54.88	N 15 16 E S 47 04 W S 27 26 W	S 15 16 W N 47 02 E N 27 25 E	2238 4471 6098	Landlet. Tizz. Mill.
3	38 05 56.94	75 17 42.48	N 7 08 E S 48 58 W S 29 42 W	S 7 08 W N 48 57 E N 29 41 E	2084 4777 6334	Landlet. Tizz. Mill.
4	38 05 52.72	75 17 44.78	N 8 14 E S 49 48 W S 29 52 W	S 8 14 W N 49 47 E N 29 51 E	2233 4638 6180	Landlet. Tizz. Mill.
5	38 05 53.78	75 17 48.02	N 10 35 E S 48 46 W S 29 00 W	S 10 35 W N 48 45 E N 28 59 E	2212 4595 6169	Landlet. Tizz. Mill.

Survey of Oyster Bars, Worcester County, Md.

RATTLESNAKE.

(Middle Chincoteague Bay—Charts Nos. 14 and 15.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 38.00	75 18 03.18	N 16 40 E S 50 43 W S 28 01 W	S 16 40 W N 50 41 E N 28 00 E	2826 3944 5510	Landlet. Tizz. Mill.
2	38 05 43.19	75 18 26.62	N 29 32 E S 42 15 W S 21 17 W	S 29 33 W N 42 14 E N 21 16 E	2910 3610 5409	Landlet. Tizz. Mill.
3	38 05 44.86	75 18 26.26	N 29 56 E S 41 46 W S 21 09 W	S 29 56 W N 41 45 E N 21 09 E	2856 3658 5354	Landlet. Tizz. Mill.
4	38 05 45.06	75 18 05.24	N 19 19 E S 47 37 W S 26 24 W	S 19 19 W N 47 35 E N 26 23 E	2616 4057 5695	Landlet. Tizz. Mill.

MARTIN POINT.

(Middle Chincoteague Bay—Charts Nos. 14 and 15.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 14.44	75 17 53.44	N 8 56 E S 62 47 W S 34 59 W	S 8 56 W N 62 46 E N 34 58 E	3544 3724 4966	Landlet. Tizz. Mill.
2	38 05 37.54	75 17 56.64	N 13 09 E S 52 26 W S 29 37 W	S 13 09 W N 52 25 E N 29 36 E	2795 4070 5576	Landlet Tizz. Mill.
3	38 05 41.75	75 17 47.56	N 8 41 E S 52 54 W S 30 59 W	S 8 41 W N 52 52 E N 30 58 E	2601 4348 5834	Landlet. Tizz. Mill.
4	38 05 25.42	75 17 34.24	N 0 43 E S 61 32 W S 37 07 W	S 0 43 W N 61 31 E N 37 05 E	3132 4349 5568	Landlet. Tizz. Mill.

DIAMOND.

(Middle Chincoteague Bay—Charts Nos. 14 and 15.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 35.23	75 16 45.20	S 87 34 E N 24 21 W S 64 54 W	N 87 32 W S 24 21 E N 64 52 E	5273 3071 5665	Turnagain. Landlet. Tizz.
2	38 05 47.16	75 16 57.82	S 83 38 E N 21 13 W S 59 40 W	N 83 36 W S 21 14 E N 59 38 E	5640 2572 5554	Turnagain. Landlet. Tizz.
3	38 05 42.50	75 16 40.28	S 84 47 E N 28 41 W S 63 17 W	N 84 45 W S 28 42 E N 63 15 E	5159 2912 5890	Turnagain. Landlet. Tizz.

Survey of Oyster Bars, Worcester County, Md.

55

SHEEP.

(Middle Chincoteague Bay—Chart No. 15.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 03.59	75 19 09.02	N 23 31 E N 62 08 W S 26 20 W	S 23 32 W S 62 09 E N 26 20 E	6425 1466 1876	Landlet. Tizz. Mill.
2	38 04 19.44	75 19 20.58	N 28 12 E N 81 19 W S 13 19 W	S 28 13 W S 81 19 E N 13 19 E	6077 1000 2277	Landlet. Tizz. Mill.
3	38 04 16.94	75 19 05.45	N 24 24 E N 80 24 W S 23 31 W	S 24 26 W S 80 25 E N 23 30 E	5974 1412 2324	Landlet. Tizz. Mill.
4	38 04 11.44	75 18 58.79	N 22 10 E N 74 59 W S 29 35 W	S 22 11 W S 75 00 E N 29 35 E	6075 1625 2238	Landlet. Tizz. Mill.

MINK TUMP.

(Middle Chincoteague Bay—Chart No. 15.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 12.42	75 18 51.98	N 20 40 E N 77 29 W S 33 02 W	S 20 41 W S 77 30 E N 33 01 E	5978 1794 2360	Landlet. Tizz. Mill.
2	38 04 21.76	75 18 50.49	N 21 25 E N 87 40 W S 30 02 W	S 21 26 W S 87 41 E N 30 01 E	5668 1792 2649	Landlet. Tizz. Mill.
3	38 04 19.78	75 18 44.38	N 19 39 E N 85 55 W S 33 46 W	S 19 39 W S 85 56 E N 33 45 E	5675 1959 2678	Landlet. Tizz. Mill.

EASTER COVE.

(Middle Chincoteague Bay—Chart No. 15.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 22.64	75 18 40.08	N 18 52 E N 88 48 W S 34 37 W	S 18 53 W S 88 49 E N 34 36 E	5546 2069 2823	Landlet. Tizz. Mill.
2	38 04 26.58	75 18 45.34	N 20 42 E S 87 20 W S 30 47 W	S 20 43 W N 87 19 E N 30 47 E	5468 1930 2859	Landlet. Tizz. Mill.
3	38 04 31.64	75 18 32.15	N 17 44 E S 83 30 W S 34 38 W	S 17 45 W N 83 29 E N 34 38 E	5190 2294 3193	Landlet. Tizz. Mill.

Survey of Oyster Bars, Worcester County, Md.

BIG BAY POINT.

(Middle Chincoteague Bay—Chart No. 15.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 14.08	75 17 22.42	N 2 51 W	S 2 51 E	5543	Landlet.
			S 85 24 W	N 85 26 E	4150	Tizz.
			S 61 02 W	N 61 01 E	4199	Mill.
2	38 04 22.96	75 17 34.93	N 0 38 E	S 0 38 W	5238	Landlet.
			N 89 30 W	S 89 32 E	3804	Tizz.
			S 55 04 W	N 55 03 E	4075	Mill.
3	38 04 29.15	75 17 27.00	N 1 45 W	S 1 45 E	5031	Landlet.
			S 87 30 W	N 87 28 E	4019	Tizz.
			S 54 25 W	N 54 23 E	4368	Mill.
4	38 04 20.42	75 17 14.93	N 5 06 W	S 5 06 E	5344	Landlet.
			N 88 26 W	S 88 27 E	4338	Tizz.
			S 59 53 W	N 59 51 E	4478	Mill.

KENNEL.

(Middle Chincoteague Bay—Chart No. 15.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 12.60	75 16 55.22	N 10 12 W	S 10 12 E	5676	Landlet.
			N 85 30 W	S 85 32 E	4879	Tizz.
			S 65 44 W	N 65 42 E	4826	Mill.
2	38 04 34.50	75 17 01.40	N 9 47 W	S 9 47 E	4919	Landlet.
			S 85 40 W	N 85 39 E	4712	Tizz.
			S 57 16 W	N 57 14 E	5034	Mill.
3	38 04 36.62	75 16 41.80	N 15 52 W	S 15 53 E	4966	Landlet.
			S 85 20 W	N 85 19 E	5238	Tizz.
			S 59 35 W	N 59 32 E	5516	Mill.
4	38 04 20.50	75 16 38.19	N 15 19 W	S 15 20 E	5503	Landlet.
			N 88 44 W	S 88 46 E	5318	Tizz.
			S 65 08 W	N 65 06 E	5349	Mill.

DRUM.

(Middle Chincoteague Bay—Chart No. 15.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 16.77	75 16 09.80	N 87 42 W	S 87 45 E	6078	Tizz.
			S 69 16 W	N 69 14 E	5998	Mill.
			S 20 02 E	N 20 01 W	6100	Pope Island L. S. S.
2	38 04 30.80	75 16 24.88	S 87 40 W	N 87 38 E	5677	Tizz.
			S 63 30 W	N 63 32 E	5820	Mill.
			S 21 53 E	N 21 52 W	6686	Pope Island L. S. S.
3	38 04 26.84	75 15 56.74	S 89 09 W	N 89 06 E	6423	Tizz.
			S 67 33 W	N 67 30 E	6448	Mill.
			S 16 00 E	N 15 58 W	6316	Pope Island L. S. S.

TOBY.

(Middle Chincoteague Bay—Chart No. 15.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	<i>Yards.</i>	
1	38 03 53.19	75 17 41.43	N 74 04 W S 67 14 W S 42 34 E	S 74 05 E N 67 13 E N 42 33 W	3776 3435 6702	Tizz. Mill. Pope Island L. S. S.
2	38 04 18.79	75 17 52.86	N 87 01 W S 52 33 W S 39 50 E	S 87 02 E N 52 32 E N 39 48 W	3331 3606 7552	Tizz. Mill. Pope Island L. S. S.
3	38 04 12.21	75 17 35.28	N 84 03 W S 59 23 W S 38 04 E	S 84 05 E N 59 22 E N 38 04 W	3816 3870 7084	Tizz. Mill. Pope Island L. S. S.
4	38 03 55.12	75 17 30.78	N 76 04 W S 68 00 W S 40 21 E	S 76 05 E N 67 59 E N 40 19 W	4034 3723 6562	Tizz. Mill. Pope Island L. S. S.

DEEP WATER.

(Middle Chincoteague Bay—Chart No. 15.)

	° ' "	° ' "	° ' "	° ' "	<i>Yards.</i>	
1	38 03 46.83	75 17 09.71	N 74 23 W S 74 29 W S 37 59 E	S 74 25 E N 74 27 E N 37 58 W	4649 4164 5991	Tizz. Mill. Pope Island L. S. S.
2	38 03 56.42	75 17 04.20	N 78 39 W S 70 56 W S 35 03 E	S 78 40 E N 70 54 E N 35 02 W	4717 4402 6164	Tizz. Mill. Pope Island L. S. S.
3	38 03 51.90	75 16 59.53	N 77 10 W S 73 18 W S 34 55 E	S 77 12 E N 73 16 E N 34 54 W	4870 4473 5967	Tizz. Mill. Pope Island L. S. S.

STRIKING MARSH.

(Middle Chincoteague Bay—Chart No. 15.)

	° ' "	° ' "	° ' "	° ' "	<i>Yards.</i>	
1	38 03 34.77	75 16 44.41	N 72 09 W S 81 25 W S 34 55 E	S 72 11 E N 81 23 E N 34 54 W	5412 4741 5262	Tizz. Mill. Pope Island L. S. S.
2	38 03 57.94	75 16 21.85	N 81 20 W S 74 17 W S 25 19 E	S 81 21 E N 74 15 E N 25 18 W	5819 5494 5639	Tizz. Mill. Pope Island L. S. S.
3	38 03 39.24	75 16 13.66	N 75 49 W S 81 09 W S 26 08 E	S 75 52 E N 81 07 E N 26 07 W	6159 5574 4975	Tizz. Mill. Pope Island L. S. S.

Survey of Oyster Bars, Worcester County, Md.

LEVIN TUMP.

(Middle Chincoteague Bay—Chart No. 15.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 30.84	75 16 09.40	N 73 36 W S 84 10 W S 26 25 E	S 73 38 E N 84 07 E N 26 22 W	6343 5651 4671	Tizz. Mill. Pope Island L. S. S.
2	38 03 52.17	75 15 52.18	N 80 41 W S 77 59 W S 18 16 E	S 80 44 E N 77 57 E N 18 16 W	6630 6216 5163	Tizz. Mill. Pope Island L. S. S.
3	38 03 31.68	75 15 54.96	N 74 45 W S 84 16 W S 21 44 E	S 74 47 E N 84 14 E N 21 43 W	6699 6037 4540	Tizz. Mill. Pope Island L. S. S.

WHITE ROCK.

(Middle Chincoteague Bay—Chart No. 15.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 56.80	75 17 24.72	N 54 13 W N 81 00 W S 53 24 E	S 54 15 E S 81 02 E N 53 23 W	5025 3658 5101	Tizz. Mill. Pope Island L. S. S.
2	38 03 34.64	75 17 56.02	N 62 52 W S 75 46 W S 48 48 E	S 62 53 E N 75 45 E N 48 46 W	3645 2866 6542	Tizz. Mill. Pope Island L. S. S.
3	38 03 48.58	75 17 39.85	N 72 01 W S 69 54 W S 43 13 E	S 72 03 E N 69 53 E N 43 11 W	3863 3418 6559	Tizz. Mill. Pope Island L. S. S.
4	38 03 34.38	75 17 08.04	N 69 43 W S 80 17 W S 40 15 E	S 69 44 E N 80 15 E N 40 14 W	4821 4116 5636	Tizz. Mill. Pope Island L. S. S.
5	38 03 09.81	75 17 02.78	N 61 48 W N 88 11 W S 45 14 E	S 61 49 E S 88 12 E N 45 12 W	5290 4199 4933	Tizz. Mill. Pope Island L. S. S.

HORSEHEAD NORTH.

(Middle Chincoteague Bay—Chart No. 15.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 51.57	75 15 49.34	N 83 03 W S 14 46 E S 28 21 E	S 83 06 E N 14 46 W N 28 21 W	6202 2698 3249	Mill. Md.-Va. (Pope Island.) Pope Island L. S. S.
2	38 02 56.14	75 15 59.71	N 84 13 W S 19 14 E S 31 08 E	S 84 15 E N 19 14 W N 31 07 W	5910 2926 3520	Mill. Md.-Va. (Pope Island.) Pope Island L. S. S.
3	38 02 59.21	75 15 49.61	N 85 26 W S 13 37 E S 26 27 E	S 85 28 E N 13 37 W N 26 26 W	6168 2951 3481	Mill. Md.-Va. (Pope Island.) Pope Island L. S. S.
4	38 02 55.20	75 15 40.38	N 84 24 W S 9 20 E S 23 37 E	S 84 26 E N 9 19 W N 23 37 W	6426 2768 3255	Mill. Md.-Va. (Pope Island.) Pope Island L. S. S.

HORSEHEAD SOUTH.

(Middle Chincoteague Bay—Chart No. 15.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 34.50	75 16 07.00	N 76 53 W	S 76 55 E	5838	Mill.
			S 29 40 E	N 29 40 W	2340	Md.-Va. (Pope Island.)
			S 41 25 E	N 41 24 W	3045	Pope Island L. S. S.
2	38 02 42.51	75 16 17.94	N 78 56 W	S 78 58 E	5495	Mill.
			S 32 12 E	N 32 11 W	2723	Md.-Va. (Pope Island.)
			S 42 05 E	N 42 04 W	3440	Pope Island L. S. S.
3	38 02 46.34	75 15 57.02	N 81 09 W	S 81 12 E	6022	Mill.
			S 20 09 E	N 20 08 W	2592	Md.-Va. (Pope Island.)
			S 33 05 E	N 33 05 W	3202	Pope Island L. S. S.
4	38 02 38.46	75 15 56.34	N 78 43 W	S 78 45 E	6087	Mill.
			S 21 59 E	N 21 59 W	2337	Md.-Va. (Pope Island.)
			S 35 36 E	N 35 36 W	2972	Pope Island L. S. S.

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

Survey of Oyster Bars, Worcester County, Md.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of the legislature of Maryland approved April 2, 1906.]

AN ACT To establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That the following sections be, and they are hereby, added to Article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis; and the said commissioners shall further cause to be

delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie. * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section.

* * * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey, and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable, the limits and boundaries of the natural beds, bars and rocks, as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the same to the clerks of the Circuit Court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed, other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks shall be construed in all the courts of the State to be barren bottoms, and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act; provided, that the said survey and report shall not be construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act.

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the Survey, is as follows:

AN ACT Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or levelling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.^a *And be it enacted*, That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the

^a Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses, (to be by them sworn or affirmed and examined) shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid, if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damage assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. *And be it enacted*, That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

APPENDIX B.—THE HAMAN OYSTER CULTURE LAW.

[Extract from Second Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland had a twofold object in view:

1. To encourage an industry in oyster culture upon the barren bottoms beneath the tidewaters of the State.

2. To prevent the leasing of natural oyster bars for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

DEFINITION OF A NATURAL OYSTER BAR.

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoying them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the Commission."

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturists, may be made to yield a greater number of oysters than they now produce."

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

The definition of a natural oyster bar which very nearly approaches a reasonable and satisfactory compromise between the views of the subject held by *oystermen* on one hand and by *oyster culturists* on the other is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Todd v. Job T. Moore.

This definition has been adopted by the Shell Fish Commission as the basis for the determination of the status of the various oyster bottoms surveyed and is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them; and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the Act of Assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the Act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and can not be located or appropriated by any individual.

APPLICATION OF DEFINITION.

Before this definition may be of use in determining, accurately and scientifically, the status of an oyster ground, its central idea, "livelihood," must be expanded into accurately determinable factors, and these factors must be combined into a practical scheme of investigating the condition of the ground under consideration.

Stated briefly, a *livelihood* is represented by a *sum of money* obtained from the sale, at a fixed *price*, of a certain *quantity of oysters* gathered in a given *time* from an allotted *area of ground*.

Knowing the value of each of these factors it becomes possible to calculate the number of oysters an oyster ground must produce per square yard in order that oystermen may secure a livelihood by working upon it.

NOTE.—The factors into which the Commission resolved the livelihood problem, the value assigned to each factor, and the scheme devised for practical use in examining and applying the definition to oyster bottoms are given in outline in their Second Report under the heading of the preceding extract, and in detail in their First Report on pages 32 to 69.

APPENDIX C.—SUMMARY OF THE PARTICULAR SURVEYING OPERATIONS WHICH CONSTITUTE AN "OYSTER SURVEY" AS NOW BEING CARRIED ON IN MARYLAND.

Explanation.—A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with methods used in surveying and charting the characteristic features of large bodies of water there is an evident necessity for the various operations performed, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest practical accuracy. To others it will be sufficient to state that the actual experience gained from oyster surveys in other States has proven that in order to avoid endless dissatisfaction and litigation it is necessary to accurately locate and permanently establish oyster boundaries as is now being done in Maryland.

Triangulation survey.—Such refinement of survey work as that demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a frame work or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

Topographic survey.—The technical records which establish the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the leaseable bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

Hydrographic survey.—In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Necessary foundation for an oyster survey.—Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of nautical charts.

Special surveys and investigations pertaining to oysters.—Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations^a making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms, and are carried on by the sounding boat party in addition to the usual hydrographic work.^b This operation consists of the observation and record of the character of vibration of a wire and chain apparatus which is dragged over the bottom, the vibrations or lack of vibrations indicating the presence and quantity of shells or absence of shells.

^a See Appendix D of this publication for "Statistics of results of combined operations of the Government and State."

^b See pages 104 to 123 of "First Annual Report of Maryland Shell Fish Commission."

The special oyster investigations^a consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

Preparation of results.—The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.^b This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for publication by the Government, the preparation of that part of the annual report of the Commission covering the special oyster surveys and investigations, the making of the leasing charts and finished projections, and finally the filing of the oyster charts and records with the courts and the Commission, thus opening a county for oyster culture.

Summary.—From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

APPENDIX D.—STATISTICS OF RESULTS OF THE COMBINED OYSTER SURVEY OPERATIONS OF THE GOVERNMENT AND STATE.^c

Operations	Anne Arundel County ^d	Somerset County ^d	Wicomico County ^d	Worcester County ^d	Total
Natural oyster bars surveyed and delineated	91	37	15	28	171
Acres of natural oyster bars	33,666	27,566	2,038	1,655	^e 64,925
Crab bottoms surveyed and delineated		54			54
Acres of crab bottoms		32,108			32,108
Clam beds surveyed and delineated		3			3
Acres of clam beds		506			506
Boundary buoys located and planted	362	154	53	108	677
Triangulation landmarks established	123	86	30	48	^f 257
Miles of shore line covered by triangulation	110	125	46	95	^f 360
Square miles of water covered by triangulation	220	375	44	110	^f 730
Miles of examination of shell bottom with chain apparatus	369	296	58	63	786
Oyster investigation stations occupied	440	679	162	147	1,428
Tide stations established	4	3	1	1	9
Number of soundings over shell bottoms	37,049	17,904	3,387	3,649	61,989
Square miles covered by soundings and chain apparatus	58	47	3	3	111
Projections prepared and plotted	9	13	2	5	^f 28
Leasing charts prepared	13	12	2	3	30
Oyster charts published	4	6	2	3	15
Reports published	2	2	2	2	^f 6
Progress maps published	2	2	2	2	^f 6

^a See pages 30 to 67 and 129 to 199 of "First Annual Report of Maryland Shell Fish Commission."

^b No mention is made here of the large amount of administrative work of the Commission, which is greatly complicated and increased by the effect of the oyster-survey operations on many thousands of people whose interests are more or less involved; or of the large amount of survey work involved in the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

^c These statistics do not include the large amount of triangulation, topography, and hydrography resulting from previous work of the Coast and Geodetic Survey which was utilized in the preparation of the published oyster charts and records.

^d Work in Calvert, St. Marys, and Charles counties has been finished, but final statistics of results will not be published until these counties are opened for oyster culture.

^e Total area of natural oyster bars of Connecticut is 5,770 acres.

^f Less quantities covered by statistics of more than one county.

COAST AND GEODETIC SURVEY
PROGRESS MAP
 WORCESTER COUNTY
 MARYLAND

To accompany report of work of United States
 Coast and Geodetic Survey in cooperation
 with the Maryland Shell Fish Commission

1907-1908

CHART No.13.

CHART No.14.

CHART No.15.