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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

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

SURVEY OF OYSTER BARS

KENT COUNTY MARYLAND

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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. TITTMANN, *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.

BALTIMORE, MD., *October 4, 1911.*

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 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.

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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 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, 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,

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.

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
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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 $76^{\circ} 14' 05''.5$; 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 $3\frac{1}{8}$ 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 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 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 $1\frac{3}{8}$ 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.

<i>References.</i> —	°	'	"	
"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.

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)"	°	'	"	
(S $44^{\circ} 19'$ W).....	0	00	00	10 miles.

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		3¾ miles.
Center of chimney of small house in rear of dwelling.....	215	00		¼ mile.
Center of middle one of three chimneys on dwelling.....	218	03		¼ mile.
Center of cupola on small building.....	220	50		¼ mile.
Near gable of barn.....	238	06		¼ mile.
Windmill.....	241	56		¼ mile.
Center one of four nails in apple tree.....	330	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 1¼ 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	9¾ miles.
Left tree on Pooles Island.....	37	53		3 miles.
Windmill on middle of long building on Pooles Island.....	54	00		2½ miles.
North peak of house with several gables on Pooles Island.....	55	21		2½ miles.
"Pooles Island Light".....	57	19	00	3¾ 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	10¼ miles.
"Fort Howard Taller Water Tank".....	354	30	00	12½ miles.
Left one of two smokestacks at Sparrows Point.....	359	35		14½ 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)"	0	'	"	
(N 87° 52' W).....	0	00	00	8½ miles.
Chimney at left end of house on opposite shore.....	57	00		6¼ miles.
Chimney at left end of house on Pooles Island.....	71	11		4¼ miles.
Chimney on middle of roof of building beyond trees.....	170	10		¾ 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		¾ 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)"	0	'	"	
(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)"	0	'	"	
(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 2½ miles north-northeast of Bodkin Point and 3¼ 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	'	"	
	0	00	00	1½ 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° 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 80° 13' E of observed station. Standard cement monument marking new reference station is on line to old reference station 13.26 meters N 80° 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	..	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 5½ 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	58		½ mile.
Apple tree (18 inches diameter).....	63	21		49 yards.
Nail in blaze in apple tree (20 inches diameter).....	83	50	00	35.02 meters.
Nail in blaze in apple tree (24 inches diameter).....	117	21	50	14.09 meters.
Nail in blaze in peach tree (5 inches diameter).....	166	42	20	10.30 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° 40' W)	0	00	00	1/4 mile.
Chimney of house	14	58		1 1/8 miles.
Chimney of old house	35	50		3/4 mile.
Right chimney of Strong house	48	12		1 mile.
Near peak of house between two barns	90	35		5/8 mile.
Large square chimney of large brick house	142	52		1/2 mile.
North chimney of brick house	204	34		150 yards.
East chimney of large house	245	47		3/8 mile.
Chimney of old house	311	05		1/2 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	1/4 mile.
Near peak of barn near several buildings	27	24		1/2 mile.
Chimney of large house	54	05		1 mile.
Near peak of large house	75	58		1 1/2 miles.
Gilt ball on weather vane	89	12		1 1/4 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	3.60 meters.
Nail in blaze in water bush (4 inches diameter)	257	42	40	10.82 meters.
Near peak of barn	277	15		1/2 mile.
West large chimney on west end of large brick house	340	24		1 mile.
Left chimney of Corr house	347	10		1/4 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	¾ 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		1½ 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		¾ 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.—

	0	1	2	
"Fork" (S 72° 56' W).....	0	00	00	1½ mile.
Chimney of tenant house.....	12	01	.....	1½ mile.
South gable of Henson barn.....	56	36	.....	5½ mile.
South gable of cornerib.....	86	18	.....	1 mile.
South gable of Swatska house.....	143	41	.....	1½ mile.
Nail in blaze in locust tree (4 inches diameter).....	161	38	00	9.94 meters.
Nail in blaze in locust tree (3 inches diameter).....	192	52	50	14.96 meters.
Nail in blaze in locust tree (3 inches diameter).....	235	52	40	19.24 meters.
North chimney of house.....	255	16	.....	¾ mile.
Highest chimney of house.....	268	50	.....	1 mile.
East chimney of Frank Ayers's house.....	288	15	.....	¾ mile.
East chimney of Georgia Ayers's house.....	306	20	.....	1½ mile.
Chimney of Sullivan house.....	310	34	.....	½ mile.
Thompson windmill.....	322	09	20	¾ mile.
North chimney of Burgess house.....	327	18	.....	¾ mile.
Chimney of fishing shack.....	339	26	.....	¾ 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.—

	0	1	2	
"Treasure" (S 24° 29' E).....	0	00	00	1½ mile.
East chimney of Georgia Ayers's house.....	14	30	.....	1½ mile.
Chimney of Sullivan house.....	32	14	.....	¾ mile.
Chimney of house.....	52	07	.....	1½ mile.
East chimney of Strong house.....	105	55	.....	1½ mile.
Chimney of Elliason house.....	119	42	.....	1½ mile.
Nail in blaze in locust tree (3 inches diameter).....	234	20	10	11.15 meters.
Chimney of Swatska tenant house.....	252	52	.....	5½ mile.
North chimney of Biglow house.....	279	57	.....	¾ mile.
North chimney of house.....	322	06	.....	¾ mile.
Rockhall M. E. Church Spire.....	334	41	50	1½ miles.
Highest chimney of house.....	350	35	.....	1 mile.
East chimney of Frank Ayers's house.....	359	25	.....	¾ 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	0.82 meters.
South gable of cornerib	36	46		1¼ miles.
Nail in blaze in pine tree (18 inches diameter).....	108	47	10	6.60 meters.
North chimney of Shamokin house.....	136	18		¾ mile.
North chimney of house.....	166	44		¾ 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		¾ mile.
West gable of barn.....	183	38		1½ 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		1¼ 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	1¾ 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	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 26° 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	4½ 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) 8¼ 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	..	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	..	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.—

	c	f	"	
"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 3/8 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 1/8 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	04	56	10	12.28 meters.
Chimney of fishing shack	133	08		32½ yards.
West gable of Queenstown elevator	153	44		3¼ miles.
Cupola on barn	164	05		2¾ 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		2¾ 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		4¼ miles.
East chimney of house	318	01		4¼ 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 6° 10' 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	29		3 miles.
Gable of house near Jackson Creek	119	20		3¾ miles.
East chimney of brick house	195	59		¼ 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	3¾ miles.
East gable of wharf house on Kent Island				
Landing	339	28		1½ miles.
Flagstaff on wharf house on Love Point				
Landing	342	03		3¾ miles.
Chimney of fishing shack	343	11		3¾ 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	3/8 mile.
Smoke pipe on shanty.....	75	13		1 mile.
Large low telegraph pole.....	99	27		3/4 mile.
Smoke pipe on slant-roofed shanty.....	107	58		5/8 mile.
Near corner of fishing shanty.....	196	21		1/4 mile.
Tangent of Long Point.....	356	41		3/4 mile.

MUDDY.

General locality.—Southern shore of Chester River on Long Point, between Muddy Creek and Jackson Creek, about 2 1/4 miles southwest of Cedar Point and 3 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.—

	°	'	"	
"Love Point Light" (N 28° 41' W).....	0	00	00	6 miles.
East chimney of house.....	34	54		2 3/4 miles.
Lone pine tree on Cedar Point.....	53	36		2 3/4 miles.
South gable of barn.....	79	35		4 1/2 miles.
Cupola on barn.....	103	11		3 miles.
Cupola on barn.....	114	53		2 1/4 miles.
West gable of barn.....	134	33		1 3/4 miles.
Chimney of house.....	146	39		1 1/4 miles.
North gable of wharf house on Jackson Creek				
Landing.....	179	21		1 mile.
North gable of house.....	182	10		1 1/4 miles.
Chimney of small house.....	202	56		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		67 yards.
South flagstaff of Love Point Hotel.....	339	43	30	5 3/8 miles.
North gable of wharf house on Love Point				
Landing.....	341	46		5 1/4 miles.
Right tangent of Love Point.....	345	12		5 3/8 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. 20.)

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).....	130	44	10	38.07 meters.
Nail in blaze in cherry tree (14 inches diameter).....	163	20	40	27.00 meters.
Nail in blaze in telephone pole No. 2848.....	107	15	20	30.33 meters.
Smokepipe of shanty.....	200	50	..	100 yards.
Near peak of ell-shaped house.....	260	00	..	1¾ miles.
Near peak of house.....	292	10	..	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	..	2½ miles.
Right tangent of piles of Bogle Wharf.....	20	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	..	2½ 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.—	o	/	"	
"Rain" (N 74° 56' W).....	0	00	00	17.8 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	30		300 yards.
West gable of small house.....	174	19		3.8 miles.
West gable of large barn.....	215	41		5.8 mile.
West gable of house.....	235	20		3.4 mile.
Northeast corner of elevator at Queenstown.....	239	21		5.8 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		1.2 mile.
Chimney of fishing shack on Cedar Point.....	352	26		2.58 miles.

RAIN.

General locality.—Western shore of Chester River on Hail Point, about 1.8 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.—	o	/	"	
"Bluebeard" (S 21° 17' E).....	0	00	00	17.8 miles.
Chimney of house.....	11	07		2.34 miles.
Cupola on barn.....	33	55		2.76 miles.
Chimney of house on Jackson Creek.....	45	07		3.36 miles.
Chimney of small house.....	48	32		3.15 miles.
Chimney of fishing shack.....	101	34		7.8 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		1.12 miles.
Right tangent of piles of Bogle Wharf.....	186	59		1.56 miles.
Williams water tank.....	255	59		2 miles.
Black beacon at entrance to Queenstown Creek.....	318	01		1.12 miles.
Cupola on barn.....	338	50		1.34 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°	'	"	
"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		3½ 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		1 mile.
Knob on door of fishing shack.....	349	58		¾ 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°	'	"	
"Bay Bush Point" (N 3° 13' W).....	0	00	00	1¾ miles.
South gable of barn.....	4	12		2½ 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.

<i>References.</i> —	0	1	2	
"Break" (S 21° 04' E).....	0	00	00	1 1/2 miles.
East chimney of house at Queenstown.....	2	36		4 miles.
Chimney of house.....	24	17		4 1/2 miles.
Gable of barn near Jackson Creek Landing..	34	49		5 1/2 miles.
North gable of house.....	35	17		5 1/2 miles.
Chimney of fishing shack.....	51	41		2 3/4 miles.
Right tangent of piles of Bogle Wharf.....	71	41		1 1/4 miles.
Chimney of house.....	77	08		1 1/2 miles.
South chimney of house.....	135	34		1 1/2 miles.
North chimney of house.....	170	54		2 1/4 miles.
West chimney of house.....	178	00		3 miles.
West gable of barn.....	199	30		3 1/2 miles.
Left tangent of woods.....	226	37		3/4 mile.
REFERENCE STATION.....	310	21	10	10.45 meters.
Williams water tank.....	339	41		1 1/4 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.

<i>Reference.</i>	0	1	2	
"Fir" (S 57° 56' E).....	0	00	00	1 1/2 miles.
Williams water tank.....	8	22		2 1/2 miles.
Chimney of house at Queenstown.....	27	17		5 1/2 miles.
West gable of barn.....	35	42		4 7/8 miles.
Left tangent of woods on Hail Point.....	45	58		3 1/4 miles.
Left tangent of piles of Bogle Wharf.....	48	21		1 1/4 miles.
Chimney of Bogle store.....	58	00		1 5/8 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		1 1/2 miles.
East gable of barn.....	262	10		3 miles.
West gable of barn.....	297	51		4 1/8 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.

References.—

	°	'	"	
"Fir" (S 25° 18' W).....	0	00	00	¾ mile.
Left tangent of piles of Bogle Wharf.....	15	23	00	2½ miles.
East gable of barn.....	42	41	00	2 miles.
South chimney of house.....	103	30	00	2 miles.
West chimney of Harris house.....	118	39	00	2¾ miles.
South gable of Strong tenant house.....	129	30	00	3 miles.
South chimney of house.....	145	25	00	3 miles.
Spindle on Brown house.....	167	02	00	3½ miles.
South gable of corn crib.....	197	30	00	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).....	60	50	00	300 yards.
North chimney of house.....	85	13	00	3¼ miles.
South gable of barn.....	115	50	00	2¾ miles.
Northwest corner of house.....	230	16	00	¾ mile.
North chimney of house.....	300	01	00	1 mile.
North gable of house.....	343	41	00	1½ miles.
Windmill.....	358	43	00	½ mile.
Chimney of house.....	359	09	00	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.

References.—

	°	'	"	
"Bird" (N 14° 23' E).....	0	00	00	¾ mile.
South gable of house near Cliffs Landing....	3	03	00	3¾ miles.
South gable of barn.....	36	18	00	1¼ miles.
Cupola of barn.....	73	23	00	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 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	1/2 mile.
East chimney of house.....	13	06	.....	3/4 mile.
South gable of barn.....	10	41	.....	3/4 mile.
Nail in blaze in persimmon tree (6 inches diameter).....	53	05	50	10.98 meters.
Cupola on barn.....	75	58	.....	5/8 mile.
Cupola on Wright barn.....	108	16	.....	3/4 mile.
North gable of barn.....	168	50	.....	5/8 mile.
East gable of house.....	181	32	.....	3/4 mile.
South gable of house.....	230	54	.....	1/2 mile.
Lone pine tree on Gordon Point.....	282	13	.....	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 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	1/2 mile.
East chimney of Harris house.....	60	07	.....	3 1/8 miles.
Chimney of house.....	101	57	.....	3 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 1/4 miles.
North gable of house.....	316	12	.....	1 3/8 miles.
Chimney of house.....	337	46	.....	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 20° 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	..	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	..	½ 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 80° 27' E).....	0	00	00	¾ mile.
Left tangent of gable of barn.....	43	07	..	3½ 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	..	½ 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	..	½ 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.

<i>References.</i> —	°	'	"	
"Spring" (S $48^{\circ} 33'$ E).....	0	00	00	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 twiu chestnut tree (10 inches diameter).....	111	56	50	8.31 meters.
Stack of Leary sawmill.....	198	51	20	1 3/8 miles.
East gable of barn.....	210	59	..	2 miles.
Left tangent of piles of Strong old wharf.....	213	34	..	3/4 mile.
Southwest corner of Strong house.....	310	53	..	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	..	1/4 mile.
Northeast corner of Harris barn.....	359	13	..	1/4 mile.

GOOSE.

General locality.—Western shore of upper Grays Inn Creek about 1 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.

<i>References.</i> —	°	'	"	
"Prussian" (N $18^{\circ} 50'$ W).....	0	00	00	1/4 mile.
East gable of house.....	0	49	..	1 1/2 miles.
West chimney of house.....	31	32	..	1 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	..	3/8 mile.
West chimney of house.....	87	21	..	1/2 mile.
North post of Harris hay shed.....	156	55	..	3/4 mile.
Nail in blaze in peach tree (6 inches diameter).....	248	59	10	10.42 meters.
East gable of barn.....	328	26	..	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 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.—

	o	i	''	
"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.—

	o	i	''	
"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	..	$1\frac{1}{4}$ 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	..	$\frac{3}{8}$ 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 $1\frac{1}{4}$ 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.—

	°	'	"	
"No Road" (S 14° 43' E).....	0	00	00	¾ mile.
North chimney of house.....	58	28	..	¼ 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 Herringtown 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.—

	°	'	"	
"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 Herringtown 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.—

	°	'	"	
"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	..	⅝ mile.
East chimney of Harris house.....	171	22	..	¾ mile.
East gable of barn.....	299	34	..	¼ mile.
North chimney of house.....	304	41	..	½ mile.
South gable of house.....	341	41	..	1¼ miles.
Left tangent of piles of Strong old wharf....	348	25	..	¾ 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	3 $\frac{1}{8}$ mile.
North chimney of house.....	78	17	..	1 $\frac{1}{4}$ miles.
East gable of small house.....	80	43	..	1 $\frac{1}{4}$ miles.
Swamp oak tree (2 feet diameter).....	131	28	..	100 yards.
Southwest corner of Strong tenant house.....	234	28	..	3 $\frac{1}{8}$ mile.
Lone sycamore tree (12 inches diameter).....	274	58	..	3 $\frac{1}{4}$ mile.
West gable of barn on Grove Creek.....	278	30	..	4 $\frac{1}{4}$ miles.
North gable of barn with two cupolas.....	287	49	..	3 $\frac{3}{8}$ miles.
Chimney of Harris tenant house.....	319	50	..	3 $\frac{1}{2}$ mile.
Left tangent of piles of Harris old wharf.....	321	36	..	3 $\frac{1}{2}$ mile.
East gable of Harris barn.....	328	02	..	3 $\frac{1}{2}$ 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. 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 6 inches above surface of ground.

References.—

	°	'	"	
"Tray" (S 36° 22' E).....	0	00	00	3 $\frac{1}{8}$ mile.
Left tangent of woods on Hail Point.....	33	13	..	53 $\frac{1}{4}$ miles.
Lone poplar tree.....	05	03	..	3 $\frac{1}{8}$ mile.
East gable of Harris house.....	68	27	..	1 $\frac{1}{2}$ mile.
East gable of Harris barn.....	73	32	..	1 $\frac{1}{2}$ mile.
Right tangent of piles of old wharf.....	93	29	..	3 $\frac{1}{8}$ mile.
Chimney of small house.....	153	23	..	1 $\frac{1}{4}$ miles.
East chimney of house.....	171	07	..	3 $\frac{1}{4}$ mile.
East gable of Strong tenant house.....	197	31	..	1 $\frac{1}{4}$ mile.
REFERENCE STATION.....	250	59	50	9.01 meters.
Chimney of Strong old distillery.....	308	33	..	1 $\frac{1}{4}$ 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	3½ mile.
REFERENCE STATION.....	90	02	50	8.86 meters.
Nail in blaze in locust tree (4 inches diameter).....	90	28	40	70.60 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	..	¾ mile.
North gable of house near shore.....	312	02	..	¾ 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	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.....	110	02	..	½ mile.
East gable of Harris house.....	150	53	..	¾ mile.
East gable of small house.....	175	15	..	¾ 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 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.....	67	37	..	2½ miles.
South gable of house.....	80	09	..	2⅞ miles.
East chimney of house.....	94	17	..	1¾ miles.
West chimney of house.....	130	52	..	2 miles.
South gable of corn crib.....	157	14	..	⅝ 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	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	12.02 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	..	3⅝ miles.
East gable of small house.....	179	26	..	2¾ miles.
Church steeple at Crosby.....	196	20	..	3¼ miles.
South gable of Brown house.....	209	09	..	2¼ miles.
West chimney of Sissel house.....	244	53	..	⅝ mile.
South gable of Emory barn.....	298	08	..	¼ mile.
West chimney of house.....	338	10	..	1⅞ 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	3/8 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 3/8 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 7/8 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	8 mile.
East gable of barn.....	11	02		5 miles.
Left tangent of Emory Wharf.....	29	50		7.8 miles.
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 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		¾ mile.
Nail in blaze in locust tree (6 inches diameter).....	336	32	10	13.85 meters.
South chimney of Earle house.....	350	42		1½ 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	½ mile.
Left tangent of peak of barn.....	24	38		1 mile.
Earle windmill.....	53	43		1½ miles.
Left edge of Earle Wharf house.....	56	38		1½ miles.
East chimney of house.....	86	14		1 mile.
South chimney of house.....	120	55		¾ mile.
West chimney of house.....	217	12		¾ mile.
North one of two cedar trees on hill.....	267	01		¾ 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 1½ 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.

	0	1	2	
"Ruth" (S 39° 11' W).....	0	00	00	5/8 mile.
North gable of barn.....	3	22	..	3/4 mile.
Earle windmill.....	40	50	..	1 1/2 miles.
Left edge of Earle Wharf house.....	43	35	..	1 1/4 miles.
East gable of barn.....	128	34	..	3/4 mile.
Nail in blaze in cedar tree (7 inches diameter).....	144	33	30	12.52 meters.
West gable of barn.....	217	05	..	1 1/4 miles.
West chimney of house.....	220	00	..	1 1/4 miles.
North chimney of house.....	229	59	..	1 1/4 miles.
West chimney of house.....	251	20	..	3/4 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.—

	0	1	2	
"Ruth" (S 29° 36' E).....	0	00	00	5/8 mile.
East chimney of house.....	29	31	..	7/8 mile.
Nail in blaze in pear tree (6 inches diameter).....	70	38	40	99.95 feet.
Earle windmill.....	90	13	..	7/8 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 3/8 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 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.—

	0	1	2	
"Hydrographic" (S 32° 06' E).....	0	00	00	5/8 mile.
East chimney of house.....	6	32	..	3/4 mile.
Chimney of house.....	44	28	..	3/8 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 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 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		1½ 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 16 inches in diameter, 80 yards southeast of a tall poplar tree, and 1300 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.....	50	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	259	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	00		1¾ miles.
South chimney of Brown house.....	249	07		1¼ 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 7 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		¾ mile.
West chimney of house.....	242	39		¾ 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		1¾ 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 $1\frac{7}{8}$ 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 $1^{\circ} 07'$ 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	..	¾ 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	..	¼ 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	$\frac{1}{8}$ 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 $1\frac{5}{8}$ 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	..	$\frac{7}{8}$ 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 $1\frac{5}{8}$ 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 $1\frac{3}{8}$ 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 $29^{\circ} 19'$ E).....	0	00	00	$\frac{1}{8}$ mile.
Left tangent of Eagle Point.....	10	49	..	$\frac{5}{8}$ 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 $2^{\circ} 57'$ 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 $32^{\circ} 51'$ W).....	0	00	00	$\frac{3}{8}$ mile.
East chimney of De Ford house.....	9	40	..	$\frac{3}{8}$ 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.
Lone 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 $27^{\circ} 40'$ 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.

References.—

	°	'	"	
"Mill" (N 53° 43' W).....	0	00	00	3/8 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	..	1/4 mile.
Chimney of house.....	282	45	..	3/4 mile.
East chimney of De Ford house.....	315	37	..	1/2 mile.
South chimney of house.....	330	57	..	3/4 mile.
North chimney of house.....	348	50	..	1 1/4 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.

References.—

	°	'	"	
"Eagle" (S 84° 10' W).....	0	00	00	1/4 mile.
West chimney of De Ford House.....	20	40	..	3/8 mile.
South chimney of house.....	29	03	..	1 1/4 miles.
North chimney of house.....	40	41	..	1 1/2 miles.
Left edge of small house.....	242	40	..	1 mile.
Right tangent of Cacaway Island.....	261	55	..	3/4 mile.
Chimney of house.....	353	56	..	3/8 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.

References.—

	°	'	"	
"Ash" (N 44° 53' E).....	0	00	00	1/8 mile.
Left peak of large house.....	55	52	..	1 3/4 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 on 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).....	60	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	..	¼ 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	$\frac{3}{8}$ mile.
North chimney of house	38	43	..	$\frac{5}{8}$ mile.
House among trees.....	150	10	..	$\frac{5}{8}$ mile.
Chimney of house.....	179	15	..	$\frac{7}{8}$ mile.
Chimney of house.....	194	37	..	$2\frac{5}{8}$ 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 $1\frac{3}{8}$ 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	$\frac{1}{4}$ mile.
Large chimney of house	4	41	..	$\frac{3}{8}$ 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	..	$1\frac{5}{8}$ 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, 10 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	¼ mile.
South peak of barn.....	8	52	..	¾ mile.
Large chimney of house.....	29	32	..	2½ miles.
Chimney on ell of large house.....	37	37	..	1½ miles.
Chimney of shanty.....	56	06	..	1 mile.
Right corner of west chimney of large brick house.....	107	59	..	¾ mile.
East peak of large barn.....	151	18	..	½ mile.
Right corner of north chimney of brick house.....	155	52	..	¾ 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	½ mile.
East chimney of brick house.....	23	45	..	¾ 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	..	¾ mile.
Northeast peak of long barn.....	201	39	..	¾ mile.
Chimney of small house.....	204	11	..	¾ 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	¾ mile.
Left tangent of chimney of brick house.....	31	46	..	½ 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	..	1¼ 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.—

	°	'	"	
"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.—

	°	'	"	
"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	..	1½ 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	..	1½ 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	¾ mile.
Northeast peak of large barn.....	22	22	00	1 mile.
Chimney on ell of house.....	24	40	00	¾ mile.
North peak of building.....	110	21	00	¾ mile.
Southwest chimney of small house.....	160	38	00	1½ miles.
East peak of small shed.....	178	21	00	1¼ 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	¼ mile.
Northeast peak of house.....	19	30	00	1½ miles.
Chimney of house.....	49	45	00	¾ mile.
South peak of barn.....	148	20	00	¾ mile.
Chimney of True house.....	293	22	00	¾ mile.
East peak of large barn.....	346	27	00	¾ mile.

HOO.

General locality. Eastern shore of East Fork of Langford Creek about 1½ 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	¾ mile.
North peak of barn.....	23	23	00	¾ mile.
South peak of barn.....	74	54	00	¾ mile.
East peak of barn.....	115	33	00	1¼ miles.
South peak of barn.....	135	05	00	2 miles.
North peak of large barn.....	311	01	00	¼ mile.
Left corner of east chimney of brick house..	318	56	00	¼ mile.

CULT.

General locality.—Eastern shore of East Fork of Langford Creek on point about 1¼ 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	½ 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 Wanus 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	½ mile.
Chimney of house near shore.....	6	19	..	1¼ 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 bark 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	..	1½ miles.
Right chimney of house.....	51	44	..	¾ mile.
Right chimney of small house.....	73	59	..	1½ 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 1½ 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	¾ mile.
North chimney of house.....	19	35	..	3¼ miles.
East gable of house.....	25	54	..	1¼ miles.
North chimney of Ashley house.....	47	01	..	1 mile.
East gable of house.....	68	32	..	1¼ 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.—

	o	/	''	
"Langford" (S 15° 55' E).....	0	00	00	3½ mile.
North gable of house.....	11	54	..	3½ 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	..	2¼ 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.—

	o	/	''	
"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.....	50	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.....	340	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.—	o	i	"	
"Langford" (N 87° 27' W).....	0	00	00	1¼ miles.
South gable of barn.....	2	44		2½ 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 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.—	o	i	"	
"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		¾ 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		1¾ 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	00	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 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	1¾ 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		1¾ 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		1¾ 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 Conneegys 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.

References.—

	°	'	"	
"Chester" (S 39° 24' W).....	0	00	00	7/8 mile.
Right tangent of Spaniard Wharf.....	30	20		1 1/2 miles.
Chimney of house near Cliffs Landing.....	61	43		1 3/4 miles.
Right peak of house on Deep Point.....	83	48		1 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		5/8 mile.
Chimney of ell of house near Indiantown Wharf.....	181	53		5/8 mile.
Left tangent of large house.....	228	11		1/4 mile.
Right chimney of house.....	297	55		7/8 mile.
Chimney outside of old house.....	359	07		7/8 mile.

DEEP POINT 2.

General locality.—Northwestern shore of Chester River on Deep Point about 1 1/4 miles east of Cliffs Landing, 1 1/4 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 1 1/2-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.

References.—

	°	'	"	
"Thorn" (N 40° 10' E).....	0	00	00	3/4 mile.
Left chimney of house.....	11	43	00	3 3/4 miles.
Left tangent of Ashland Wharf.....	13	04		1 3/8 miles.
Near chimney on west peak of house.....	22	58		2 1/2 miles.
Southwest peak of house near Indiantown Wharf.....	31	23		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 diam- eter).....	93	54	00	15.02 meters.
Largest one of three chimneys of house.....	102	07		1 1/4 miles.
Chimney of brick house.....	153	25		1 mile.
Chimney on near peak of house.....	233	39		1 1/4 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 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.....	150	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	49		2 1/4 miles.
Chimney on end of house.....	27	50		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	5½ mile.
Chimney of house on Westcott Wharf.....	18	36	..	1¼ miles.
South peak of large barn.....	78	48	..	5½ mile.
Near chimney of Quaker Neck Wharf house.....	89	20	..	1½ mile.
Left chimney of old house.....	108	41	..	.....
Left tangent of hook-shaped point of marsh.....	183	22	..	1½ mile.
Near peak of house.....	196	25	..	1½ 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 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	5½ mile.
Left peak of Bookers Wharf house.....	21	00	..	1½ miles.
Cupola.....	50	14	..	1 mile.
Windmill.....	50	55	..	78 mile.
Left chimney of house.....	107	14	..	1½ miles.
Cupola on barn.....	123	50	..	1¾ miles.
Nail in blaze in cedar tree (7 inches diameter).....	143	13	30	24.90 meters.
Smoke pipe of wharf house.....	151	03	..	¾ mile.
Left chimney of house.....	180	43	..	130 yards.
Left chimney of old house on near side of Jarretts Creek.....	277	29	..	¾ mile.
Chimney of house among trees.....	309	06	..	1¼ 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	1/2 mile.
Left chimney of Quaker Neck Wharf house.....	39	02		7/8 mile.
Right peak of barn.....	60	43		1 mile.
Peak of middle dormer window of large house.....	114	30		3/4 mile.
Left peak of large house.....	163	49		1 1/4 miles.
Left peak of Bookers Wharf house.....	187	48		1/2 mile.
Large cedar tree.....	191	11		275 yards.
Spindle on left cupola of barn.....	262	00	20	1/2 mile.
Weather vane on barn.....	320	01	50	1/2 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	5/8 mile.
Left peak of house on ridge.....	1	35		1 1/2 miles.
Right peak of small house.....	47	58		3/4 mile.
West peak of Bookers Wharf house.....	48	50		5/8 mile.
Spindle on left cupola on barn.....	96	01		3/4 mile.
Weather vane on cupola on barn.....	125	48		1 mile.
Chimney of house near Indiantown Wharf.....	155	29		1 1/8 miles.
Large chimney of Massey brick house.....	160	16		1 7/8 miles.
Smoke pipe of Quaker Neck Wharf house.....	182	50		3/4 mile.
Peak of middle dormer window of large house.....	290	07		1/2 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	5/8 mile.
Left chimney of Quaker Neck Wharf house.....	17	46		1 1/2 miles.
Near peak of house in woods.....	53	23		3/4 mile.
Peak of middle dormer window on left side of house among trees.....	68	05		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 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° 26' 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	..	7/8 mile.
South chimney of near one of twin houses	142	49	..	¾ mile.
East chimney of brick house among trees on ridge	109	16	..	1½ miles.
South peak of building	229	41	..	¼ mile.
Large lone tree on ridge	290	10	..	¼ mile.
Left chimney of large house	324	39	..	¼ 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 diameter)	14	28	20	5.23 meters.
Windmill	52	29	30	2 miles.
Right corner of house	71	49	..	1¼ miles.
Large lone tree in field	93	20	..	1½ 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 diameter)	107	10	50	7.74 meters.
Nail in blaze in cedar tree (8 inches diameter)	106	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 diameter)	20	43	40	12.37 meters.
Nail in blaze in elm tree (9 inches diameter)	00	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	..	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	1½ 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	..	1¼ 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	½ mile.
East peak of large barn.....	33	37	..	1 mile.
Chimney of house.....	75	53	..	1½ miles.
"Robertson Windmill".....	138	57	20	1 mile.
Right peak of small house near Rolphs Wharf.....	153	54	..	2¼ miles.
Left peak of taller of two barns.....	197	17	..	½ 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	½ mile.
Chimney of left one of twin houses.....	10	37	..	1½ miles.
Near peak of large barn.....	37	29	..	1 mile.
Middle one of three large trees.....	39	50	..	¾ mile.
"Robertson Windmill".....	130	23	30	1¼ miles.
South chimney of house at Rolphs Wharf.....	165	38	..	1½ miles.
Weather vane on large barn.....	176	18	..	1¼ miles.
Northwest peak of Wilmers Wharf cannery.....	187	53	..	¾ mile.
Nail in blaze in cedar tree (8 inches diameter).....	108	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	½ mile.
Near peak of cannery.....	7	17	..	1½ 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 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	09	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.....	160	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		7/8 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	3/8 mile.
Northwest peak of large barn.....	4	34	..	1 1/4 miles.
Northwest peak of large barn.....	21	09	..	1 mile.
Flagstaff on Rolphs Wharf.....	23	33	..	3/8 mile.
Weathervane on very large barn.....	48	01	..	1 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 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 1/4 miles.
Spindle on cupola on left one of two barns at Wilmers Wharf.....	177	08	40	3/4 mile.
Northwest peak of Wilmers Wharf cannery..	190	15	..	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 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	1/4 mile.
Weathervane on wharf house.....	10	10	..	1/4 mile.
Left peak of wharf house.....	71	30	..	1/2 mile.
Left peak of small house among trees.....	104	28	30	1 3/4 miles.
Spindle on barn cupola.....	115	06	..	1 3/4 miles.
Peak of middle dormer window of house.....	271	38	..	1 1/4 miles.
Peak of large barn.....	333	25	..	5/8 mile.
Flagstaff on Rolphs Wharf house.....	356	27	..	1/4 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	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 17 05.86	76 12 43.96	N 30 43 E	S 30 44 W	4821	Worton Point 2.
			N 86 00 W	S 86 01 E	4702	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 00 W	N 15 00 E	4661	Bramble.
4	39 17 29.08	76 12 28.86	N 31 35 E	S 31 36 W	3045	Worton Point 2.
			S 85 05 W	N 85 03 E	5195	Pooles Island 2.
			S 18 23 W	N 18 22 E	4603	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 20 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	5704	Pooles Island 2.
			S 11 09 W	N 11 60 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	563	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 03 17 E	S 03 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 10 54 E	N 10 54 W	4226	Mitchells Bluff 2.
			S 85 30 E	N 85 31 W	2935	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 10 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		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 12 46.80	76 16 23.97	N 6 12 E	S 6 12 W	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	8085	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	12303	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	12022	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 24 00 W	8732	Wickes Beach.
			N 47 48 E	S 47 49 W	4158	Stevens.
			N 0 40 E	S 0 40 W	5875	Swan Point 3.
2	39 07 20.67	76 17 51.73	N 35 21 E	S 35 22 W	3002	Swan Point 3.
			N 48 44 W	S 48 47 E	12192	Craighill Channel Light (Front Range).
			N 82 50 W	S 82 54 E	12102	Bodkin Point (Old Tower).
3	39 07 25.11	76 19 00.00	N 56 55 E	S 56 57 W	4213	Swan Point 3.
			N 43 03 W	S 43 06 E	10797	Craighill Channel Light (Front Range).
			N 82 25 W	S 82 29 E	10293	Bodkin Point (Old Tower).
4	39 08 50.00	76 19 00.00	N 36 34 W	S 36 37 E	12360	Craighill Channel Light (Rear Range).
			N 55 42 W	S 55 45 E	8922	Craighill Channel Light (Front Range).
			S 81 36 W	N 81 32 E	10314	Bodkin Point (Old Tower).
5	39 10 25.76	76 17 01.90	N 57 20 W	S 57 25 E	12431	Craighill Channel Light (Rear Range).
			S 79 21 W	N 79 16 E	12059	Seven Foot Knoll Light.
			S 6 27 E	N 6 27 W	3818	Swan Point 3.
6	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.
7	39 08 24.73	76 17 29.16	N 42 06 W	S 42 10 E	14543	Craighill Channel Light (Rear Range).
			S 86 58 W	N 87 03 E	12607	Bodkin Point (Old Tower).
			S 4 15 E	N 4 15 W	10116	Love Point Light.
8	39 08 05.36	76 17 05.35	N 74 27 E	S 74 28 W	2301	Gratitude.
			N 28 53 E	S 28 53 W	1075	Swan Point 3.
			N 89 59 W	N 89 50 E	13214	Bodkin Point (Old Tower).
9	39 07 51.73	76 17 20.18	N 67 33 E	S 67 34 W	2819	Gratitude.
			N 32 58 E	S 32 50 W	1070	Swan Point 3.
			N 87 56 W	S 88 01 E	12833	Bodkin Point (Old Tower).
10	39 06 46.38	76 17 02.03	S 0 19 E	N 0 19 W	6756	Love Point Light.
			N 81 21 E	S 81 22 W	3483	Stevens.
			N 6 50 E	S 6 50 W	3631	Swan Point 3.
11	39 06 41.57	76 16 21.77	S 8 47 W	N 8 48 E	6687	Love Point Light.
			N 73 58 E	S 73 59 W	2483	Stevens.
			N 9 26 W	S 9 26 E	3819	Swan Point 3.

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SWAN CREEK.

(Swan Creek—Chart No. 28.)

Corner of bar	Latitude	Longitude	True bearing				Distance	U. S. C. & G. S. triangulation station
			Forward		Back			
			°	'	°	'		
1	39 00 09.48	76 15 15.10	S 42 19 W	N 42 18 E	Yards. 338 431 770	Fork. Elliason. Urie.		
			N 57 02 W	S 57 02 E				
			N 28 28 W	S 28 29 E				
2	39 00 10.05	76 15 25.67	S 72 32 E	N 72 31 W	480 408 604	Rail. Spike. Urie.		
			N 40 11 E	S 40 11 W				
			N 7 45 W	S 7 45 E				
3	39 00 13.10	76 15 27.13	S 42 41 E	N 42 41 W	1033 307 706	Haven. Spike. Corr.		
			N 55 18 E	S 55 18 W				
			N 25 47 E	S 25 47 W				
4	30 09 12.78	76 15 15.30	S 31 35 W	N 31 35 E	423 377 671	Fork. Elliason. Urie.		
			N 70 56 W	S 70 56 E				
			N 32 37 W	S 32 37 E				

ROCKHALL.

(Swan Creek—Charts Nos. 28 and 29.)

1	39 08 53.00	76 15 02.98	N 17 48 W	S 17 48 E	453	Rail.
			N 60 41 W	S 60 42 E	626	Fork.
			S 74 00 W	N 74 00 E	1020	Orchard.
2	39 08 54.20	76 15 14.33	N 22 14 E	S 22 14 W	422	Rail.
			N 42 57 W	S 42 57 E	363	Fork.
			S 64 46 W	N 64 46 E	755	Orchard.
3	39 08 58.57	76 15 05.23	N 18 04 W	S 18 04 E	256	Rail.
			N 76 19 W	S 76 19 E	501	Fork.
			S 63 02 W	N 63 01 E	1035	Orchard.

WHITE HORSE.

(Swan Creek—Chart Nos. 28 and 29.)

1	39 08 44.82	76 15 18.15	N 20 12 E	S 20 12 W	754	Rail.
			N 14 11 W	S 14 11 E	600	Fork.
			S 80 28 W	N 80 28 E	583	Orchard.
2	39 08 51.58	76 15 19.85	S 86 15 E	N 86 15 W	510	Haven.
			N 16 08 W	S 16 08 E	369	Fork.
			S 66 33 W	N 66 32 E	586	Orchard.
3	39 08 54.20	76 15 14.33	N 22 14 E	S 22 14 W	422	Rail.
			N 42 57 W	S 42 57 E	363	Fork.
			S 64 46 W	N 64 46 E	755	Orchard.
4	39 08 48.40	76 15 12.32	N 76 39 E	S 76 39 W	320	Haven.
			N 33 03 W	S 33 03 E	550	Fork.
			S 80 16 W	N 80 16 E	746	Orchard.
5	39 08 47.37	76 15 15.03	N 75 02 E	S 75 02 W	420	Haven.
			N 22 29 W	S 22 29 E	537	Fork.
			S 81 53 W	N 81 53 E	647	Orchard.

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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	420	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 00 E	S 51 00 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	1140	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	627	Fork.
			N 64 17 W	S 64 17 E	403	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.

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TAVERN CREEK.

(Tavern Creek—Charts Nos. 28 and 29.)

Corner of bar	Latitude	Longitude	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
	° / ' "	° / ' "	° / ' "	° / ' "		
1	39 08 27.51	76 16 11.76	S 80 50 E	N 80 50 W	819	Gratitude.
			N 13 29 E	S 13 29 W	447	Bank.
			N 77 40 W	S 77 40 E	909	Swan Point 3.
2	39 08 30.27	76 16 15.46	S 76 09 E	N 76 08 W	934	Gratitude.
			N 30 31 E	S 30 32 W	397	Bank.
			N 82 43 W	S 82 43 E	797	Swan Point 3.
3	39 08 40.79	76 16 02.68	S 44 37 E	N 44 37 W	812	Gratitude.
			N 77 28 E	S 77 28 W	602	Orchard.
			N 2 25 E	S 2 25 W	592	Tavern.
4	39 08 38.68	76 15 59.86	S 44 24 E	N 44 24 W	710	Gratitude.
			N 68 32 E	S 68 32 W	551	Orchard.
			N 4 15 W	S 4 15 E	664	Tavern.

WINDMILL FLATS.

(Entrance Rockhall Harbor—Chart No. 29.)

1	39 07 43.39	76 15 55.17	S 50 19 E	N 50 19 W	2192	Stevens.
			N 66 52 E	S 66 52 W	1344	Windmill Point.
			N 38 12 W	S 38 13 E	2140	Swan Point 3.
2	39 08 05.75	76 16 00.56	S 40 20 E	N 40 19 W	2825	Stevens
			N 40 28 E	S 40 29 W	793	Gratitude.
			N 51 52 W	S 51 53 E	1504	Swan Point 3.
3	39 08 08.86	76 15 40.29	S 68 37 E	N 68 37 W	908	Windmill Point.
			N 2 00 W	S 2 00 E	499	Gratitude.
			N 64 21 W	S 64 22 E	1902	Swan Point 3.
4	39 07 55.20	76 15 15.66	S 19 51 E	N 19 51 W	1912	Stevens.
			N 56 43 E	S 56 43 W	237	Windmill Point.
			N 34 42 W	S 34 43 E	1167	Gratitude.

MUDDY DRAIN.

(Entrance Rockhall Harbor—Chart No. 29.)

1	39 07 11.20	76 15 47.38	S 78 02 E	N 78 02 W	1515	Stevens.
			N 32 35 E	S 32 36 W	1015	Windmill Point.
			N 28 55 W	S 28 55 E	3102	Swan Point 3.
2	39 07 20.43	76 16 10.52	S 73 22 E	N 73 21 W	2182	Stevens.
			N 51 32 E	S 51 33 W	2094	Windmill Point.
			N 20 33 W	S 20 33 E	2624	Swan Point 3.
3	39 08 01.67	76 16 23.83	S 50 26 E	N 50 25 W	3165	Stevens.
			N 56 40 E	S 56 40 W	1348	Gratitude.
			N 28 12 W	S 28 12 E	1210	Swan Point 3.
4	39 08 05.75	76 16 00.56	S 40 20 E	N 40 19 W	2825	Stevens.
			N 40 29 E	S 40 29 W	793	Gratitude.
			N 51 52 W	S 51 53 E	1504	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 86 15 W	088	Stevens.
			N 16 01 E	S 16 01 W	1939	Windmill Point.
			N 33 52 W	S 33 53 E	3634	Swan Point 3.
2	39 07 11.20	76 15 47.38	S 78 02 E	N 78 02 W	1515	Stevens.
			N 32 35 E	S 32 36 W	1015	Windmill Point.
			N 28 55 W	S 28 55 E	3162	Swan Point 3.
3	39 07 43.39	76 15 55.17	S 50 19 E	N 50 19 W	2192	Stevens.
			N 66 52 E	S 66 52 W	1344	Windmill Point.
			N 38 12 W	S 38 13 E	2140	Swan Point 3.
4	39 07 55.20	76 15 15.66	S 19 51 E	N 19 51 W	1912	Stevens.
			N 50 43 E	S 50 43 W	237	Windmill Point.
			N 34 42 W	S 34 43 E	1167	Gratitude.
5	39 07 45.55	76 14 58.40	N 44 34 W	S 44 35 E	2507	Bank.
			N 60 14 W	S 60 15 E	3243	Swan Point 3.
			S 7 33 E	N 7 33 W	1485	Stevens.
6	39 07 15.90	76 14 57.43	N 10 56 W	S 10 56 E	1480	Windmill Point.
			N 47 27 W	S 47 26 E	3856	Swan Point 3.
			S 22 38 W	N 22 37 E	8416	Love Point Light.

GUM SPRING.

(Entrance Chester River—Chart No. 29.)

1	39 06 18.23	76 15 01.87	N 11 00 E	S 11 00 W	1500	Stevens.
			N 30 53 W	S 30 54 E	5300	Swan Point 3.
			S 28 12 W	N 28 11 E	6605	Love Point Light.
2	39 06 34.48	76 15 26.56	N 45 20 E	S 45 20 W	1315	Stevens.
			N 9 39 E	S 9 39 W	2893	Windmill Point.
			N 27 23 W	S 27 24 E	4512	Swan Point 3.
3	39 07 01.33	76 15 09.20	N 87 45 E	S 87 45 W	470	Stevens.
			N 0 51 E	S 0 51 W	1947	Windmill Point.
			N 39 13 W	S 39 14 E	4003	Swan Point 3.

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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	S 14 08 E	4241	Stevens.
			N 29 21 W	S 29 22 E	8253	Swan Point 3.
			S 54 25 W	N 54 24 E	5466	Love Point Light.
2	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.
3	39 05 32.80	76 15 16.79	N 12 43 E	S 12 44 W	3081	Stevens.
			N 20 58 W	S 20 59 E	6518	Swan Point 3.
			S 32 28 W	N 32 27 E	5085	Love Point Light.
4	39 06 34.48	76 15 26.56	N 45 20 E	S 45 20 W	1315	Stevens.
			N 9 39 E	S 9 39 W	2893	Windmill Point.
			N 27 23 W	S 27 24 E	4512	Swan Point 3.
5	39 06 18.23	76 15 01.87	N 11 00 E	S 11 00 W	1500	Stevens.
			N 30 54 W	S 30 54 E	5306	Swan Point 3.
			S 28 12 W	N 28 11 E	6695	Love Point Light.
6	39 06 01.63	76 14 35.07	N 11 37 W	S 11 38 E	2075	Stevens.
			N 33 50 W	S 33 51 E	6157	Swan Point 3.
			S 36 02 W	N 36 00 E	6506	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	S 12 44 W	3081	Stevens.
			N 20 58 W	S 20 59 E	6518	Swan Point 3.
			S 32 28 W	N 32 27 E	5085	Love Point Light.
2	39 05 57.81	76 15 50.02	S 13 04 E	N 13 04 W	8847	Wickes Beach.
			N 35 40 E	S 35 41 W	2661	Stevens.
			N 15 33 W	S 15 34 E	5442	Swan Point 3.
3	39 06 34.48	76 15 26.56	N 45 20 E	S 45 20 W	1315	Stevens.
			N 9 39 E	S 9 39 W	2893	Windmill Point.
			N 27 23 W	S 27 24 E	4512	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 70 00 W	S 70 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	3405	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	3070	Stevens.
			S 48 07 W	N 48 06 E	4996	Love Point Light.
			S 1 00 E	N 1 00 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 00 E	6687	Stevens.
			S 81 02 W	N 81 00 E	4058	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	6200	Wickes Beach.
			N 20 22 E	S 20 22 W	5351	Stevens.
			N 8 05 W	S 8 05 E	8170	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.

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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		
	° ' "	° ' "	° ' "	° ' "	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 70 01 E	3373	Love Point Light.
			S 10 54 E	N 10 54 W	2894	Wickes Beach.
2	39 03 13.74	76 15 46.03	N 10 39 E	S 10 39 W	7829	Stevens.
			N 78 28 W	S 78 29 E	2001	Love Point Light.
			S 60 10 W	N 60 08 E	4162	Amour.
3	39 03 34.90	76 15 45.98	N 11 42 E	S 11 42 W	7128	Stevens.
			S 80 55 W	N 80 54 E	1987	Love Point Light.
			S 26 31 E	N 26 30 W	4245	Wickes Beach.
4	39 03 35.38	76 14 49.45	N 0 20 W	S 0 20 E	6963	Stevens.
			S 84 33 W	N 84 31 E	3405	Love Point Light.
			S 6 06 E	N 6 06 W	3837	Wickes Beach.

WICKES BEACH.

(Entrance Chester River—Chart No. 29.)

1	39 01 21.86	76 15 15.70	N 57 57 E	S 57 57 W	1296	Wickes Beach.
			N 33 28 W	S 33 29 E	5002	Love Point Light.
			N 77 57 W	S 77 59 E	5329	Railway Water Tank.
2	39 02 13.18	76 16 24.02	N 21 31 W	S 21 31 E	2625	Love Point Light.
			S 79 43 W	N 79 42 E	3470	Railway Water Tank.
			S 10 26 W	N 10 26 E	5562	Macum.
3	39 02 29.54	76 16 03.98	N 38 14 W	S 38 15 E	2407	Love Point Light.
			S 73 27 W	N 73 26 E	4112	Railway Water Tank.
			S 14 18 W	N 14 18 E	6215	Macum.
4	39 02 29.16	76 15 19.18	N 54 30 W	S 54 31 E	3276	Love Point Light.
			S 77 16 W	N 77 14 E	5249	Railway Water Tank.
			S 24 19 W	N 24 18 E	6593	Macum.

DREDGE ROCK.

(Lower Chester River—Chart No. 29.)

1	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	2791	Narrows Point.
			N 9 16 E	S 9 16 W	2001	Wickes Beach.
2	39 00 52.68	76 15 19.53	S 80 27 E	N 80 26 W	3702	Narrows Point.
			N 35 39 E	S 35 39 W	2057	Wickes Beach.
			N 67 42 W	S 67 44 E	5524	Railway Water Tank
3	39 01 16.43	76 16 09.35	S 74 05 E	N 74 03 W	5159	Narrows Point.
			N 70 52 E	S 70 52 W	2656	Wickes Beach.
			N 17 12 W	S 17 12 E	4559	Love Point Light.
4	39 01 18.75	76 15 22.18	S 68 08 E	N 68 06 W	4008	Narrows Point.
			N 58 01 E	S 58 01 W	1496	Wickes Beach.
			N 31 11 W	S 31 12 E	5000	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	1610	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 10.02	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	2550	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	1610	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	2032	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.

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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		
	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 59 28.23	76 12 41.30	S 78 44 E	N 78 43 W	2669	Bluebeard.
			N 29 44 E	S 29 45 W	2805	Rain.
			N 12 56 W	S 12 57 E	2291	Narrows Point.
2	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.
3	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.
4	39 00 02.44	76 13 30.18	S 67 59 E	N 67 57 W	4467	Bluebeard.
			N 43 05 E	S 43 06 W	1479	Narrows Point.
			N 23 10 W	S 23 11 E	3601	Wickes Beach.
5	38 59 54.30	76 12 20.26	S 58 10 E	N 58 39 W	2605	Bluebeard.
			N 34 24 E	S 34 25 W	1981	Rain.
			N 31 30 W	S 31 31 E	1588	Narrows Point.

HAIL CREEK.

(Lower Chester River—Chart No. 30.)

1	39 00 27.60	76 12 25.07	S 32 12 W	N 32 11 E	3982	Muddy.
			S 40 57 E	N 40 57 W	3343	Bluebeard.
			N 63 07 E	S 63 08 W	1131	Rain.
2	39 00 33.00	76 12 30.88	S 29 00 W	N 29 00 E	4061	Muddy.
			S 40 53 E	N 40 53 W	3581	Bluebeard.
			N 74 11 E	S 74 11 W	1207	Rain.
3	39 00 40.76	76 12 17.24	S 31 24 W	N 31 23 E	4467	Muddy.
			S 33 46 E	N 33 45 W	3572	Bluebeard.
			S 78 51 E	N 78 49 W	4027	Blakeford.
4	39 00 37.85	76 12 06.10	S 35 12 W	N 35 11 E	4546	Muddy.
			S 30 31 E	N 30 30 W	3332	Bluebeard.
			S 79 27 E	N 79 26 W	3720	Blakeford.

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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	S 21 34 W	1420	Rain.
			N 53 37 W	S 53 38 E	1768	Narrows Point.
			S 45 36 W	N 45 35 E	3647	Muddy.
2	39 00 38.78	76 11 52.80	S 38 25 W	N 38 24 E	4781	Muddy.
			S 24 40 E	N 24 48 W	3168	Bluebeard.
			S 77 51 E	N 77 50 W	3384	Blakeford.
3	39 00 31.00	76 11 34.58	S 18 05 E	N 18 05 W	2777	Bluebeard.
			S 80 58 E	N 80 58 W	2803	Blakeford.
			N 40 07 E	S 40 08 W	2702	Break.
4	39 00 07.90	76 11 43.20	N 83 51 E	S 83 52 W	3072	Blakeford.
			N 4 31 W	S 4 31 E	1179	Rain.
			N 66 19 W	S 66 20 E	2230	Narrows Point.

BLACK BUOY.

(Middle Chester River—Chart No. 30.)

1	39 00 30.80	76 11 21.27	S 11 00 E	N 11 00 W	2681	Bluebeard.
			S 79 52 E	N 79 51 W	2516	Blakeford.
			N 33 52 E	S 33 52 W	2497	Break.
2	39 00 49.90	76 11 48.77	S 71 14 E	N 71 13 W	3380	Blakeford.
			N 55 57 E	S 55 58 W	2551	Break.
			N 22 19 W	S 22 19 E	2491	Overton.
3	39 00 50.95	76 11 16.05	S 64 22 E	N 64 21 W	2595	Blakeford.
			N 41 58 E	S 41 50 W	1874	Break.
			N 38 31 W	S 38 32 E	2901	Overton.

DURDIN.

(Middle Chester River—Chart No. 30.)

1	39 00 59.82	76 11 16.15	S 54 26 W	N 54 26 E	990	Rain.
			S 58 45 E	N 58 44 W	2741	Blakeford.
			N 48 56 E	S 48 57 W	1666	Break.
2	39 01 13.87	76 12 12.17	N 32 32 E	S 32 32 W	1245	Rain.
			N 77 12 E	S 77 13 W	2800	Break.
			N 12 27 W	S 12 27 E	1533	Overton.
3	39 01 56.03	76 12 09.10	S 13 24 E	N 13 24 W	2540	Rain.
			S 73 11 E	N 73 10 W	2768	Break.
			N 45 38 E	S 45 39 W	2377	Fir.
4	39 02 00.58	76 11 57.00	S 5 53 E	N 5 53 W	2638	Rain.
			S 67 44 E	N 67 43 W	2519	Break.
			N 42 29 E	S 42 29 W	2045	Fir.

BELTS.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "		
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	Yards. 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 10.98	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 01 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 0 41 W	N 0 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 20.33	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	4600	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 S 67 11 E N 88 53 E	N 43 37 E N 67 10 W S 88 54 W	1150 2312 3925	Bay Bush Point. Gordon. Reeds.
2	39 03 58.35	76 12 27.02	S 6 03 W S 68 42 E S 88 28 E	N 6 03 E N 68 41 W N 88 26 W	1039 3022 4609	Bay Bush Point. Gordon. Reeds.
3	39 04 17.59	76 11 58.20	S 27 16 W S 49 41 E S 78 39 E	N 27 16 E N 49 40 W N 78 38 W	1802 2699 3927	Bay Bush Point. Gordon. Reeds.
4	39 04 59.05	76 11 48.68	N 62 39 E N 1 49 E N 63 47 W	S 62 40 W S 1 49 W S 63 48 E	2994 924 694	Langford. Inn. Little Gum.
5	39 04 59.57	76 11 01.32	N 46 10 E N 0 05 W N 81 12 W	S 46 11 W S 0 05 E S 81 13 E	1962 1621 1890	Langford. Deep Cove. Little Gum.
6	39 03 57.95	76 11 42.85	S 51 15 W S 56 45 E S 88 10 E	N 51 15 E N 56 45 W N 88 09 W	1629 1978 3448	Bay Bush Point. Gordon. Reeds.

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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	1620	Bay Bush Point.
			S 56 45 E	N 56 45 W	1978	Gordon.
			S 88 10 E	N 88 00 W	3448	Reeds.
2	39 04 59.57	76 11 01.32	N 46 10 E	S 46 11 W	1062	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	2094	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	2094	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	1062	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.

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 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.
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 29.80	76 10 19.85	S 6 42 E	N 6 42 W	931	Peach.
			N 79 23 E	S 79 23 W	579	Major.
			N 1 17 E	S 1 17 W	502	Drum.
4	39 06 39.54	76 09 58.30	N 5 53 E	S 5 53 W	978	Neck.
			N 72 41 W	S 72 42 E	581	Drum.
			S 20 04 W	N 20 04 E	1334	Peach.

DRUM POINT.

(Langford Creek—Chart No. 30.)

1	39 06 29.80	76 10 19.85	S 6 42 E	N 6 42 W	931	Peach.
			N 79 23 E	S 79 23 W	579	Major.
			N 1 17 E	S 1 17 W	502	Drum.
2	39 06 54.02	76 10 06.02	N 26 47 W	S 26 47 E	827	Davis.
			S 48 09 W	N 48 09 E	472	Drum.
			S 16 07 E	N 16 07 W	739	Major.
3	39 06 54.14	76 09 58.70	N 12 59 E	S 12 59 W	402	Neck.
			S 59 36 W	N 59 36 E	631	Drum.
			S 1 02 E	N 1 02 W	714	Major.
4	39 06 39.54	76 09 58.30	N 5 53 E	S 5 53 W	978	Neck.
			N 72 41 W	S 72 41 E	581	Drum.
			S 20 04 W	N 20 04 E	1334	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 26 47 E	827	Davis. Drum. Major.
			S 48 09 W	N 48 09 E	472	
			S 16 07 E	N 16 07 W	739	
2	39 07 23.47	76 10 23.08	S 20 59 E	N 20 59 W	1824	Major. Neck. King.
			S 55 51 E	N 55 50 W	908	
			N 62 23 E	S 62 24 W	1025	
3	39 07 23.03	76 10 15.45	S 4 37 W	N 4 37 E	1298	Drum. Neck. King.
			S 48 04 E	N 48 04 W	740	
			N 55 19 E	S 55 19 W	861	
4	39 07 11.02	76 09 59.10	N 16 30 W	S 16 30 E	907	Isle. Davis. Drum.
			N 73 24 W	S 73 25 E	579	
			S 31 00 W	N 31 00 E	1037	
5	39 06 54.14	76 09 58.70	N 12 59 E	S 12 59 W	402	Neck. Drum. Major.
			S 59 36 W	N 59 36 E	631	
			S 1 02 E	N 1 02 W	714	

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 11.02	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.

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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	404	
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	

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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	S 50 55 W	505	Cult.
			N 8 01 W	S 8 01 E	183	Leary.
			S 55 42 W	N 55 42 E	397	Noth.
2	39 07 48.83	76 09 06.87	S 37 51 W	N 37 51 E	390	Noth.
			S 8 46 E	N 8 46 W	515	Wann.
			N 64 00 E	S 64 00 W	535	Cult.
3	39 08 02.92	76 08 47.82	N 51 20 E	S 51 20 W	539	Hoo.
			N 22 57 W	S 22 57 E	184	Nest.
			S 49 06 W	N 49 06 E	579	Leary.
4	39 08 00.40	76 08 44.30	N 37 55 E	S 37 55 W	539	Hoo.
			N 32 51 W	S 32 51 E	303	Nest.
			S 61 00 W	N 61 00 E	606	Leary.

PHILIPS.

(Langford Creek (East Fork)—Chart No. 30.)

1	39 08 09.97	76 08 43.38	N 71 58 E	S 71 58 W	320	Hoo.
			N 9 45 W	S 9 45 E	334	Woll.
			S 70 01 W	N 70 01 E	200	Nest.
2	39 08 36.04	76 08 40.31	N 28 27 W	S 28 27 E	581	Gut.
			S 45 19 W	N 45 19 E	245	Harp.
			S 44 45 E	N 44 44 W	505	Ide.
3	39 08 35.95	76 08 35.33	N 66 59 W	S 67 00 E	959	Clay.
			S 60 59 W	N 60 59 E	349	Harp.
			S 32 17 E	N 32 17 W	421	Ide.
4	39 08 10.16	76 08 37.42	N 57 54 E	S 57 54 W	175	Hoo.
			N 33 29 W	S 33 29 E	386	Woll.
			S 77 45 W	N 77 45 E	353	Nest.

WARE.

(Langford Creek (East Fork)—Chart No. 30.)

1	39 08 59.38	76 08 54.90	N 73 39 W	S 73 39 E	316	Lovely.
			S 41 34 W	N 41 34 E	556	Clay.
			S 12 19 E	N 12 19 W	982	Harp.
2	39 09 01.97	76 09 00.33	N 89 24 W	S 89 24 E	161	Lovely.
			S 24 11 W	N 24 11 E	551	Clay.
			S 18 35 E	N 18 35 W	1105	Harp.
3	39 09 08.03	76 08 55.65	S 54 28 W	N 54 28 E	348	Lovely.
			S 26 15 W	N 26 15 E	788	Clay.
			S 10 23 E	N 10 22 W	1272	Harp.
4	39 09 05.60	76 08 50.16	S 74 15 W	N 74 15 E	145	Lovely.
			S 38 15 W	N 38 15 E	796	Clay
			S 4 09 E	N 4 09 W	1172	Harp.

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EBB 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 05 33.00	76 09 47.26	S 37 17 E	N 37 17 W	1973	Holton Point.
			N 85 37 E	S 85 38 W	1721	Spaniard Point 2 Upper.
			N 46 26 E	S 46 26 W	2297	Brown.
2	39 06 13.72	76 09 28.55	S 13 26 E	N 13 26 W	3025	Holton Point.
			S 44 37 E	N 44 36 W	1744	Spaniard Point 2 Upper.
			N 79 51 E	S 79 52 W	1191	Brown.
3	39 06 00.20	76 09 10.92	S 5 30 E	N 5 30 W	2498	Holton Point.
			S 44 06 E	N 44 06 W	1095	Spaniard Point 2 Upper.
			N 46 49 E	S 46 49 W	973	Brown.
4	39 05 35.30	76 09 32.67	S 26 14 E	N 26 14 W	1835	Holton Point.
			N 87 41 E	S 87 41 W	1334	Spaniard Point 2 Upper.
			N 40 23 E	S 40 24 W	1076	Brown.

CLIFF.

(Middle Chester River—Chart No. 30.)

1	39 06 00.20	76 09 10.92	S 5 30 E	N 5 30 W	2498	Holton Point.
			S 44 06 E	N 44 06 W	1095	Spaniard Point 2 Upper.
			N 46 49 E	S 46 49 W	973	Brown.
2	39 06 13.72	76 09 28.55	S 13 26 E	N 13 26 W	3025	Holton Point.
			S 44 37 E	N 44 36 W	1744	Spaniard Point 2 Upper.
			N 79 51 E	S 79 52 W	1191	Brown.
3	39 06 12.68	76 08 40.08	S 2 19 W	N 2 19 E	1208	Spaniard Point 2 Upper.
			S 51 34 E	N 51 33 W	953	Evans.
			N 30 40 E	S 30 40 W	517	Stratton.
4	39 06 21.95	76 08 23.98	N 50 18 W	S 50 18 E	207	Stratton.
			S 82 38 W	N 82 38 E	520	Brown.
			S 19 39 E	N 19 39 W	960	Evans.
5	39 06 12.56	76 08 11.72	N 67 34 E	S 67 35 W	1771	Deep Point 2.
			N 47 00 W	S 47 01 E	658	Stratton.
			N 73 37 W	S 73 37 E	883	Brown.

COMMEGY'S BIGHT.

(Middle Chester River—Chart No. 30.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "		
1	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	Yards. 1771 658 883	Deep Point 2. Stratton. Brown.
2	39 06 21.95	76 08 23.08	N 50 18 W S 82 38 W S 19 39 E	S 50 18 E N 82 38 E N 10 39 W	207 529 960	Stratton. Brown. Evans.
3	39 06 38.73	76 08 14.70	S 42 54 W S 3 05 E S 83 07 E	N 42 54 E N 3 05 W N 83 06 W	592 1473 1727	Stratton. Evans. Deep Point 2.
4	39 06 25.00	76 07 12.53	S 11 25 W S 80 30 E N 17 33 E	N 11 25 E N 80 30 W S 17 33 W	1258 681 269	Chester. Corpse. Deep Point 2.

SHEEP (KENT COUNTY).

(Middle Chester River—Chart No. 30.)

1	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	1225 576 314	Chester. Corpse. Deep Point 2.
2	39 06 36.86	76 06 50.13	S 0 12 E N 65 54 E N 19 52 E	N 0 12 W S 65 54 W S 19 52 W	520 820 851	Corpse. Indian. Thorn.
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.

DEEP POINT.

(Middle Chester River—Chart No. 30.)

1	39 06 41.00	76 06 52.05	S 11 14 E N 77 39 E N 27 56 E	N 11 14 W S 77 39 W S 27 56 W	685 818 725	Corpse. Indian. Thorn.
2	39 06 43.87	76 06 57.40	S 20 06 E N 84 01 E N 40 25 E	N 20 06 W S 84 01 W S 40 26 W	707 945 740	Corpse. Indian. Thorn.
3	39 07 04.49	76 06 29.43	S 62 38 W S 18 56 E N 82 48 E	N 62 38 E N 18 56 W S 82 48 W	287 631 883	Thorn. Indian. Ashland.

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.

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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.
			N 18 47 E	S 18 47 W	550	Cake.
			N 57 27 W	S 57 27 E	1036	Pomona.
2	39 08 31.66	76 04 45.37	S 41 09 E	N 41 09 W	617	Melton.
			N 75 46 E	S 75 46 W	595	Cake.
			N 28 21 W	S 28 21 E	1169	Taste.
3	39 08 25.78	76 04 29.37	S 64 31 E	N 64 31 W	704	Journey.
			N 24 26 E	S 24 26 W	378	Cake.
			N 66 53 W	S 66 54 E	972	Pomona.

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.
			N 24 26 E	S 24 26 W	378	Cake.
			N 66 53 W	S 66 54 E	972	Pomona.
2	39 08 49.92	76 04 53.37	S 59 11 E	N 59 10 W	916	Cake.
			N 66 46 E	S 66 46 W	636	Bill.
			N 39 52 W	S 39 52 E	538	Taste.
3	39 08 30.13	76 04 28.43	S 53 39 E	N 53 39 W	759	Journey.
			N 33 40 E	S 33 40 W	238	Cake.
			N 75 40 W	S 75 40 E	948	Pomona.

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 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 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 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.

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 STATE.¹

[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; Wicomico, Aug. 27, 1907, and Dec. 1, 1908; Worcester, Nov. 8, 1907, and Apr. 12, 1909; Calvert, May 1, 1909, and Dec. 4, 1909; Charles Anne, 18, 1908, and Jan. 27, 1911; St. Marys, May 2, 1908, and July 6, 1911; Baltimore, Apr. 14, 1909, and Aug. 10, 1911; Kent, Apr. 14, 1909, and Oct. 1, 1911.]

Operations	Anne Arundel County	Somerset County	Wicomico County	Worcester County	Calvert County	Charles County	St. Marys County	Baltimore County	Kent County	Total
Natural oyster bars surveyed and delineated	91	17	15	15	47	15	143	15	64	418
Acres of natural oyster bars	31,600	27,560	2,618	1,655	12,321	2,285	25,779	3,005	12,869	111,151
Acres of oyster bars surveyed and delineated	374,108	54								374,162
Cham beds surveyed and delineated		500								500
Acres of cham beds		362	154	53	149	51	513	13	211	1,614
Boundary buoys located and planted	123	80	30	48	78	42	218	15	147	650
Miles of shore line covered by triangulation	210	175	46	95	195	32	160	12	110	1,700
Square miles of water covered by triangulation	220	135	33	63	130	23	100	10	70	1,000
Tides of examination of shell bottom with chain apparatus	169	230	58	63	250	38	500	39	165	1,972
Oyster bar examinations occupied	440	679	162	147	667	113	1,472	64	1,151	4,895
Tide stations established	1	1	1	1	1	1	1	1	1	11
Number of soundings over shell bottoms	37,604	17,993	3,383	3,669	11,270	2	19,441	7	3	22
Square miles covered by soundings and chain apparatus	58	47	3	3	38	1	1,651	1	1	103,459
Square miles prepared and plotted	9	13	2	5	8	3	15	4	10	60
Leasing charts prepared	13	12	2	3	5	2	10	1	4	51
Oyster charts published	4	2	2	3	5	2	8	1	3	30
Reports published	2	2	2	2	2	2	2	2	2	11
Progress maps published	2	2	2	2	2	2	2	2	2	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 compilation of the published oyster charts and records. Work in Queen Anne's, Talbot, and Dorchester Counties has been finished, but final statistics of results will not be published until the summer of 1912.

² Less quantities covered by statistics of more than one county.

³ Total area of natural oyster bars of Connecticut is 5,779 acres.

Survey of Oyster Bars, Kent County, Md.

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

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