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

SURVEY OF OYSTER BARS

ANNE ARUNDEL COUNTY
MARYLAND

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

By C. C. YATES

ASSISTANT AND CHIEF OF PARTY, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1907

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

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DEPARTMENT OF COMMERCE AND LABOR

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LETTER OF SUBMITTAL.

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

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

Respectfully,

O. H. TITTMANN, *Superintendent.*

To Hon. OSCAR S. STRAUS,
Secretary of Commerce and Labor.

CERTIFICATION.

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

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

C. C. YATES,

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

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

Examined and certified to be correct.

WALTER J. MITCHELL,

BENJAMIN K. GREEN,

CASWELL GRAVE,

Maryland Shell Fish Commissioners.

SWEFSON EARLE,

Hydrographic Engineer.

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

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SURVEY OF OYSTER BARS, ANNE ARUNDEL COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

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

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

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

COOPERATION OF THE COAST AND GEODETIC SURVEY.

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

LAWS RELATING TO THE COOPERATION.

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

[Act of Congress approved May 26, 1906.]

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

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

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

* * * * *

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

—

[Act of Congress approved March 4, 1907.]

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

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

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

Survey of Oyster Bars, Anne Arundel County, Md.

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[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 office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie.

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

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

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

AN ACT concerning the survey of the coast of Maryland.

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

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

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

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts^a of the natural oyster bars of "Anne Arundel County and Adjacent Waters," published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, consist of a series of four sheets, covering the west shore of Chesapeake Bay from Fort Carroll to Holland Point. They are published on the scale of 1 part in 20,000 (approximately $3\frac{1}{4}$ inches to a statute mile), and are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey.

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

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

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

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

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

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

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

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

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

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

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

PROJECTIONS.

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

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

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

PROGRESS MAP.

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

^aFor this map, see folder at end of this publication.

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

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

BOUNDARIES OF COUNTY WATERS.

WATERS WITHIN TERRITORIAL LIMITS OF THE COUNTY.

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

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

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

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

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

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

WATERS CONTIGUOUS TO THE COUNTY.

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

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

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

LIMITS OF DREDGING AREA ADJACENT TO CRAIGHILL CHANNEL.

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

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

^b Statute miles.

^c True bearings.

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

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

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

LIST OF NATURAL OYSTER BARS WITHIN DREDGING AREA OF COUNTY.

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

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

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

Chart No. 1:

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

Chart No. 2:

- Outer Magothy.

Chart No. 3:

- (No dredging area on this chart.)

Chart No. 4:

- Bay Shore.

BOUNDARIES OF NATURAL OYSTER BARS.

EXPLANATION OF DESCRIPTIONS OF BOUNDARIES.

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

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

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

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

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

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

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

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

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

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

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

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

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

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

LUMPS EAST OF CRAIGHILL CHANNEL.

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

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

BODKIN POINT NORTH.

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

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

BODKIN POINT SOUTH.

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

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

MOUNTAIN POINT.

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

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

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SILLERY BAY.

(Magothy River—Chart No. 1.)

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

PEACH HILL.

(Magothy River—Chart No. 2.)

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

WELCH.

(Magothy River—Chart No. 2.)

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

PARK.

(Magothy River—Chart No. 2.)

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

UMPHASIS.

(Magothy River—Chart No. 2.)

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

BLACK.

(Magothy River—Chart No. 2.)

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

Survey of Oyster Bars, Anne Arundel County, Md.

PERSIMMON.

(Magothy River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 03 16.00	76 26 46.33	S 54 28 E	N 54 28 W	686	Purse.
			N 31 28 E	S 31 28 W	1913	Welch.
			N 22 14 W	S 22 14 E	3183	Dobbins.
2	39 03 28.52	76 26 24.15	S 12 11 E	N 12 11 W	1018	Purse.
			N 18 57 E	S 18 57 W	1278	Welch.
			N 35 18 W	S 35 18 E	3093	Dobbins.
3	39 03 22.07	76 26 06.65	N 1 48 W	S 1 48 E	1427	Welch.
			N 39 20 W	S 39 21 E	3545	Dobbins.
			S 17 22 W	N 17 22 E	815	Purse.

OUTER MAGOTHY.

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

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

SANDY POINT NORTH.

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

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

SANDY POINT SOUTH.

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

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

Survey of Oyster Bars, Anne Arundel County, Md.

HACKETT POINT.

(Annapolis Roads—Chart No. 2.)

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

WHITEHALL CREEK.

(Whitehall Bay—Chart No. 2.)

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

SAND SPIT.

(Whitehall Bay—Chart No. 2.)

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

WHITEHALL.

(Annapolis Roads—Chart No. 2.)

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

WRECK BUOY.

(Annapolis Roads—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 57 45.00	76 26 08.80	N 1 28 W N 69 03 W S 29 36 W	S 1 28 E S 69 03 E N 29 36 E	4053 1901 2893	Chase. Greenbury Point Light. Tolly.
2	38 57 45.74	76 26 24.60	N 4 26 E N 64 17 W S 21 45 W	S 4 26 W S 64 17 E N 21 44 E	4039 1508 2735	Chase. Greenbury Point Light. Tolly.
3	38 57 56.16	76 26 26.80	N 5 45 E N 76 53 W S 18 17 W	S 5 45 W S 76 54 E N 18 16 E	3694 1336 3045	Chase. Greenbury Point Light. Tolly.
4	38 57 57.21	76 25 57.41	N 6 20 W N 82 38 W S 30 34 W	S 6 20 E S 82 39 E N 30 34 E	3662 2092 3400	Chase. Greenbury Point Light. Tolly.

TOLLY POINT.

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

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

CHINKS POINT.

(Annapolis Roads—Chart No. 2.)

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

INSIDE GREENBURY POINT.

(Lower Severn River—Chart No. 2.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° / "	° / "	° / "	° / "	Yards.	
1	38 58 13.37	76 27 29.65	S 61 56 W S 51 54 E N 30 56 E	N 61 55 E N 51 54 W S 30 56 W	1610 449 510	Start. Greenbury Point Light. Greenbury.
2	38 58 14.06	76 27 36.89	S 57 35 W S 61 06 E N 47 34 E	N 57 35 E N 61 06 W S 47 34 W	1457 622 612	Start. Greenbury Point Light. Greenbury.
3	38 58 55.75	76 27 29.30	S 82 28 W S 51 15 W S 11 25 E	N 82 28 E N 51 15 E N 11 24 W	3156 1927 1741	State House Dome. Horn. Greenbury Point Light.
4	38 58 54.50	76 27 18.35	S 83 48 W S 56 59 W S 1 56 E	N 83 48 E N 56 58 E N 1 56 W	3438 2137 1666	State House Dome. Horn. Greenbury Point Light.

HORN POINT.

(Mouth of Severn River—Chart No. 2.)

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

OLD FORT.

(Lower Severn River—Chart No. 2.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 58 44.78	76 27 42.38	N 15 57 W	S 15 57 E	561	Fort.
			S 57 38 W	N 57 37 E	1375	Horn.
			S 48 52 E	N 48 51 W	793	Greenbury.
2	38 58 49.56	76 28 09.64	N 64 08 E	S 64 09 W	627	Fort.
			N 33 48 W	S 33 48 E	895	Bluff.
			S 23 51 W	N 23 51 E	1090	Horn.
3	38 58 56.77	76 27 57.56	S 79 22 W	N 79 22 E	2427	State House Dome.
			S 31 28 W	N 31 28 E	1453	Horn.
			S 44 08 E	N 44 08 W	1430	Greenbury.
4	38 58 49.85	76 27 37.41	S 85 48 W	N 85 47 E	2923	State House Dome.
			S 52 01 W	N 52 00 E	1636	Horn.
			S 30 26 E	N 30 26 W	921	Greenbury.

LITTLE SANDY.

(Lower Severn River—Chart No. 2.)

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

CRECES COVE.

(Lower Severn River—Chart No. 2.)

	° / ' "	° / ' "	° / '	° / '	Yards.	
1	38 59 13.44	76 28 38.63	N 39 18 W	S 39 19 E	1194	Brice.
			S 52 15 W	N 52 14 E	1646	State House Dome.
			S 76 47 E	N 76 47 W	272	Bluff.
2	38 59 23.31	76 28 39.65	N 50 59 W	S 51 00 E	938	Brice.
			S 43 34 W	N 43 33 E	1854	State House Dome.
			S 9 17 E	N 9 17 W	2164	Horn
3	38 59 23.65	76 28 33.55	S 85 24 W	N 85 24 E	1498	Hospital Cupola.
			S 46 43 W	N 46 42 E	1975	State House Dome.
			S 5 01 E	N 5 01 W	2155	Horn.
4	38 59 13.78	76 28 33.22	N 44 34 W	S 44 34 E	1281	Brice.
			S 54 46 W	N 54 46 E	1771	State House Dome.
			S 59 03 E	N 59 03 W	143	Bluff.

FERRY POINT.

(Lower Severn River—Chart No. 2.)

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

PEACH ORCHARD.

(Middle Severn River—Chart No. 2.)

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

WEEMS LOWER.

(Middle Severn River—Chart No. 2.)

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

WEEMS UPPER.

(Middle Severn River—Chart No. 2.)

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

WADE.

(Middle Severn River—Chart No. 2.)

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

TRACES HOLLOW.

(Middle Severn River—Chart No. 2.)

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

SHARP POINT.

(Middle Severn River Chart No. 2.)

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

SALTWORK.

(Upper Severn River—Chart No. 2.)

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

ROCK POINT LOWER.

(Upper Severn River—Chart No. 2.)

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

CHASE.

(Upper Severn River—Chart No. 2.)

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

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CLEM POINT.

(Upper Severn River—Chart No. 2.)

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

POINT.

(Upper Severn River—Chart No. 2.)

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

AISQUITH CREEK.

(Upper Severn River—Chart No. 2.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	39 01 48.26	76 31 34.61	N 12 15 E	S 12 15 W	261	Bight.
			S 72 33 W	N 72 33 E	688	Brewer.
			S 6 41 W	N 6 41 E	1093	Clem.
2	39 01 56.26	76 31 43.25	N 48 07 W	S 48 07 E	639	Arnold.
			S 42 02 W	N 42 02 E	647	Brewer.
			S 87 08 E	N 87 08 W	283	Bight.
3	39 01 59.26	76 31 38.16	N 60 49 W	S 60 49 E	769	Arnold.
			S 44 17 W	N 44 17 E	807	Brewer.
			S 52 14 E	N 52 14 W	188	Bight.

BREWER (SEVERN RIVER).

(Upper Severn River—Chart No. 2.)

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

POPPIN POINT.

(Upper Severn River—Chart No. 2.)

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

ARNOLD POINT.

(Upper Severn River—Chart No. 2.)

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

BIG ISLAND.

(Upper Severn River—Chart No. 2.)

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

ROUND BAY.

(Upper Severn River—Chart No. 2.)

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

ROCK POINT UPPER.

(Upper Severn River—Chart No. 2.)

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

UNDER THE GUMS.

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

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

THOMAS POINT NORTH.

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

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 53 44.24	76 25 52.57	N 42 18 W	S 42 19 E	4167	Cottage.
			N 54 26 W	S 54 27 E	2604	Thomas.
			S 79 25 W	N 79 23 E	5612	Gowan.
2	38 53 55.73	76 26 23.01	N 87 08 E	S 87 08 W	337	Thomas Point Light.
			N 36 45 W	S 36 46 E	3357	Cottage.
			S 73 13 W	N 73 11 E	4924	Gowan.
3	38 54 09.43	76 26 21.37	N 63 57 W	S 63 57 E	1512	Thomas.
			S 68 26 W	N 68 24 E	5116	Gowan.
			S 33 23 E	N 33 23 W	533	Thomas Point Light.
4	38 54 41.78	76 26 54.87	N 45 41 W	S 45 41 E	1628	Cottage.
			S 47 34 W	N 47 34 E	644	Thomas.
			S 37 26 E	N 37 26 W	1932	Thomas Point Light.
5	38 54 50.14	76 26 49.48	N 56 53 W	S 56 53 E	1563	Cottage.
			S 41 12 W	N 41 12 E	937	Thomas.
			S 29 38 E	N 29 37 W	2091	Thomas Point Light.
6	38 55 00.30	76 26 22.75	N 75 45 W	S 75 46 E	2073	Cottage.
			S 51 32 W	N 51 31 E	1690	Thomas.
			S 8 40 E	N 8 40 W	2185	Thomas Point Light.
7	38 54 48.81	76 25 55.02	N 71 53 W	S 71 54 E	2887	Cottage.
			S 72 06 W	N 72 05 E	2159	Thomas.
			S 12 45 W	N 12 45 E	1819	Thomas Point Light.
8	38 54 23.04	76 26 02.85	N 55 09 W	S 55 09 E	3094	Cottage.
			N 83 39 W	S 83 39 E	1859	Thomas.
			S 12 10 W	N 12 10 E	925	Thomas Point Light.

THOMAS POINT SOUTH.

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

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

OLD WOMAN.

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

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

MARSHY POINT.

(Mouth of South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 53 20.61	76 28 06.36	N 68 35 E N 31 21 E S 83 14 W	S 68 36 W S 31 21 W N 83 13 E	3287 2706 2006	Thomas Point Light. Thomas. Gowan.
2	38 53 49.82	76 29 24.70	N 87 36 E N 48 38 E N 16 08 W	S 87 38 W S 48 39 W S 16 08 E	5129 2671 1461	Thomas Point Light. Arundel. Selby.
3	38 54 15.82	76 29 31.20	S 82 53 E N 67 48 E N 24 02 W	N 82 55 W S 67 49 W S 24 02 E	5337 2349 576	Thomas Point Light. Arundel. Selby.
4	38 54 29.17	76 28 38.13	N 87 20 W S 24 22 W N 60 36 E	S 87 20 E N 24 21 E S 60 37 W	1635 2797 892	Selby. Gowan. Arundel.
5	38 54 35.04	76 28 19.55	N 50 11 E S 86 43 W S 30 50 W	S 50 11 W N 86 42 E N 30 50 E	375 2126 3199	Arundel. Selby. Gowan.
6	38 54 11.00	76 28 25.29	S 82 04 E N 22 41 E N 70 44 W	N 82 03 W S 22 41 W S 70 45 E	3594 1138 2089	Thomas Point Light. Arundel. Selby.

TURKEY POINT.

(Lower South River—Chart No. 3.)

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

RULER FLATS.

(Lower South River—Chart No. 3.)

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

SWAN REEF.

(Lower South River—Chart No. 3.)

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

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OUTER ROUND POINT.

(Lower South River—Chart No. 3.)

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

INNER ROUND POINT.

(Lower South River—Chart No. 3.)

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

HILL POINT EAST.

(Lower South River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.		
1	38 55 20.97	76 29 52.13	N 54 17 W	S 54 18 E	332	Hill.	
			S 10 44 E	N 10 44 W	1701	Selby.	
			S 64 22 E	N 64 21 W	3025	Arundel.	
2	38 55 25.06	76 29 54.63	S 67 02 W	N 67 02 E	1115	Mayo.	
			S 11 57 E	N 11 57 W	1848	Selby.	
			S 62 37 E	N 62 38 W	3145	Arundel.	
3	38 55 30.57	76 29 29.42	S 81 28 W	N 81 28 E	878	Hill.	
			S 66 50 W	N 66 50 E	1801	Mayo.	
			S 8 02 W	N 8 02 E	2014	Selby.	
4	38 55 25.50	76 29 28.36	N 87 22 W	S 87 23 E	897	Hill.	
			S 75 21 W	N 75 20 E	1777	Mayo.	
			S 9 38 W	N 9 38 E	1849	Selby.	

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HILL POINT.

(Lower South River—Chart No. 3.)

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

ROCK POINT.

(Lower South River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 55 20.49	76 30 47.71	N 80 01 E	S 80 02 W	1213	Hill.
			N 12 06 W	S 12 07 E	1201	Switch.
			N 48 22 W	S 48 22 E	1765	Cedar.
2	38 55 28.28	76 30 56.01	S 87 52 E	N 87 52 W	1414	Hill.
			N 2 05 W	S 2 05 E	912	Switch.
			N 50 24 W	S 50 24 E	1427	Cedar.
3	38 55 29.48	76 30 40.51	S 17 21 E	N 17 21 W	612	Mayo.
			S 84 42 E	N 84 42 W	1000	Hill.
			N 26 52 W	S 26 52 E	977	Switch.

FOX POINT.

(Lower South River—Chart No. 3.)

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

PURDY FLATS.

(Middle South River—Chart No. 3.)

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

THUNDER AND LIGHTNING.

(Middle South River—Chart No. 3.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 55 57.18	76 31 08.83	N 36 54 W	S 36 53 E	2142	Waggaman.
			S 85 11 W	N 85 10 E	766	Cedar.
			S 31 26 E	N 31 26 W	1779	Mayo.
2	38 56 30.58	76 31 20.96	S 86 39 W	N 86 39 E	1180	Almshouse.
			S 20 26 W	N 20 26 E	1271	Cedar.
			S 27 41 E	N 27 40 W	1344	Switch.
3	38 56 18.78	76 31 04.72	N 80 43 W	S 80 43 E	1930	Almshouse.
			S 47 42 W	N 47 42 E	1179	Cedar.
			S 13 55 E	N 13 55 W	816	Switch.
4	38 55 58.24	76 31 02.95	N 40 38 W	S 40 38 E	2212	Waggaman.
			S 83 46 W	N 83 46 E	923	Cedar.
			S 26 27 E	N 26 27 W	1736	Mayo.

BREWER.

(Middle South River—Chart No. 3.)

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

ALMSHOUSE.

(Upper South River—Chart No. 3.)

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

DUVALL.

(Upper South River—Chart No. 3.)

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

ABERDEEN.

(Upper South River—Chart No. 3.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 56 37.57	76 31 59.68	N 54 41 W	S 54 41 E	1516	Ginger.
			S 54 50 W	N 54 50 E	559	Almshouse.
			S 22 03 E	N 22 03 W	1539	Cedar.
2	38 56 48.89	76 32 15.18	S 63 41 W	N 63 41 E	588	Brewer.
			S 3 59 W	N 3 59 E	795	Almshouse.
			S 86 12 E	N 86 12 W	463	Waggaman.
3	38 57 06.13	76 32 01.08	S 85 53 W	N 85 53 E	1203	Ginger.
			S 46 46 W	N 46 45 E	1229	Brewer.
			S 18 07 W	N 18 07 E	1363	Almshouse.

BEARD POINT.

(Upper South River—Chart No. 3.)

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

ROUGH POINT.

(Upper South River—Chart No. 3.)

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

SAUNDERS.

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

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station.
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 52 30.94	76 28 47.83	N 31 58 W	S 31 58 E	1696	Gowan.
			S 76 16 W	N 76 15 E	2925	Dutchman.
			S 33 27 W	N 33 26 E	3156	Curtis.
2	38 52 50.36	76 29 22.01	N 0 13 E	S 00 13 W	785	Gowan.
			S 55 12 W	N 55 11 E	2362	Dutchman.
			S 14 18 W	N 14 18 E	3392	Curtis.
3	38 53 12.32	76 29 02.90	N 71 59 E	S 72 01 W	4785	Thomas Point Light.
			N 25 16 E	S 25 17 W	3350	Arundel.
			N 85 09 W	S 85 09 E	503	Gowan.
4	38 53 49.82	76 29 24.70	N 87 36 E	S 87 38 W	5129	Thomas Point Light.
			N 48 38 E	S 48 39 W	2671	Arundel.
			N 16 08 W	S 16 08 E	1461	Selly.
5	38 53 20.61	76 28 06.36	N 68 35 E	S 68 36 W	3287	Thomas Point Light.
			N 31 21 E	S 31 21 W	2706	Thomas.
			S 83 14 W	N 83 13 E	2006	Gowan.

LULU.

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

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 51 15.58	76 26 30.52	S 62 03 E	N 62 01 W	5359	Bloody Point Light.
			N 5 38 E	S 5 38 W	5444	Thomas Point Light.
			S 64 56 W	N 64 54 E	5075	Horseshoe.
2	38 52 30.94	76 28 47.83	N 31 58 W	S 31 58 E	1696	Gowan.
			S 76 16 W	N 76 15 E	2925	Dutchman.
			S 33 27 W	N 33 26 E	3156	Curtis.
3	38 53 20.61	76 28 06.36	N 68 35 E	S 68 36 W	3287	Thomas Point Light.
			N 31 21 E	S 31 21 W	2706	Thomas.
			S 83 14 W	N 83 13 E	2006	Gowan.
4	38 53 11.92	76 27 15.19	N 48 49 E	S 48 49 W	2275	Thomas Point Light.
			N 1 18 E	S 1 18 W	2604	Thomas.
			N 89 02 W	S 89 03 E	3340	Gowan.
5	38 53 01.40	76 26 45.98	N 26 59 E	S 27 00 W	2075	Thomas Point Light.
			N 13 31 W	S 13 31 E	3042	Thomas.
			N 84 18 W	S 84 19 E	4131	Gowan.

DUTCHMAN.

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

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

THREE SISTERS.

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

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

CURTIS.

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

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

COLLINS FLATS.

(West River—Chart No. 3.)

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

POTATO HILL.

(West River—Chart No. 3.)

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

CEDAR POINT.

(West River—Chart No. 3.)

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

BARREN NECK.

(West River—Chart No. 3.)

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

TUCKER.

(West River—Chart No. 3.)

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

CHESTON POINT.

(Rhode River—Chart No. 3.)

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

DUTCHMAN HOLLOW.

(Rhode River—Chart No. 3.)

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

BRICE FENCE.

(Rhode River—Chart No. 3.)

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

STONY HOLLOW.

(Rhode River—Chart No. 3.)

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

CHERRY.

(Rhode River—Chart No. 3.)

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

JACKASS.

(Rhode River—Chart No. 3.)

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

BOLSTON BANK.

(Rhode River—Chart No. 3.)

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

HIGH ISLAND.

(Rhode River—Chart No. 3.)

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

FLAT ISLAND.

(Rhode River—Chart No. 3.)

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

BUCE.

(Rhode River—Chart No. 3.)

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

BAY SHORE.

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

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

LONG.

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

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

FAIRHAVEN.

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

	°	'	"	°	'	"	°	'	Yards.		
1	38	44	33.63	76	32	47.46	S 45 51 E	N 45 50 W	2566	Holland.	
							N 9 49 E	S 9 49 W	3716	Parker.	
							N 50 55 W	S 50 56 E	2277	Fairhaven.	
2	38	44	39.19	76	33	11.47	S 51 25 E	N 51 26 W	3165	Holland.	
							N 20 03 E	S 20 03 W	3699	Parker.	
							N 42 16 W	S 42 16 E	1686	Fairhaven.	
3	38	45	04.65	76	32	56.40	N 18 23 E	S 18 24 W	2757	Parker.	
							N 14 04 W	S 14 04 E	2321	Hopkins.	
							N 75 44 W	S 75 45 E	1581	Fairhaven.	
4	38	45	47.06	76	33	27.00	S 34 50 W	N 34 49 E	1267	Fairhaven.	
							S 34 05 E	N 34 04 W	5148	Holland.	
							N 54 48 E	S 54 45 W	2054	Parker.	
5	38	45	27.79	76	32	27.80	N 3 34 E	S 3 34 W	1839	Parker.	
							N 41 54 W	S 41 54 E	1975	Hopkins.	
							S 80 19 W	N 80 17 E	2321	Fairhaven.	

HOLLAND POINT.

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

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

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

EXPLANATION OF DESCRIPTION OF LANDMARKS.

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

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

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

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

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

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

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

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

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

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

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

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

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

NORTH POINT (OLD TOWER).

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

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

References.—

"Craighill Channel Light (Front Range)"..... $0^{\circ} \quad /$ S $81^{\circ} 20'$ E $2\frac{1}{2}$ miles.

CRAIGHILL CHANNEL LIGHT (FRONT RANGE).

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

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

References.—

"North Point (Old Tower)"..... $0^{\circ} \quad /$ N $81^{\circ} 19'$ W $2\frac{1}{2}$ miles.

ROCK POINT.

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

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

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

References.—

"Seven Foot Knoll Light"	(S $78^{\circ} 17'$ E).....	$0^{\circ} \quad /$	00 00	$3\frac{3}{4}$ miles.
Bodkin Point (Old Tower).....	25 43 ..		34 ..	$3\frac{3}{4}$ miles.
Tower on east corner.....	194 00 ..		70 ..	yards.
Outer "White Rocks".....	211 07 ..		$\frac{3}{4}$..	mile.
Water tower (opposite shore).....	291 27 ..		$2\frac{1}{2}$..	miles.

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

SEVEN FOOT KNOLL LIGHT.

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

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

References.—

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

BODKIN POINT (OLD TOWER).

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

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

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

References.—

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

LOCUST.

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

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

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

References.—

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

BAY (MAGOTHY RIVER).

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

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

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

References.—

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

PHIL.

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

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

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

References.—

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

HICKORY.

Locality.—Northwest shore of Sillery Bay on Hickory Bar Point, about ¼ mile north by east of Dobbins Island and ¼ mile west by south of entrance to cove separating Gibson Island from mainland. (See Chart No. 1.)

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

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

References.—

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

SILLERY.

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

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

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

References.—

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

PEACH HILL.

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

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

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

References.—

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

WELCH.

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

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

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

References.—

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

BLUFF (MAGOTHY RIVER).

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

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

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

References.—

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

DOBBINS.

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

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

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

References.—

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

IRON.

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

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

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

References.—

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

HAM.

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

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

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

References.—

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

BANK.

Locality.—North shore of upper end of Magothy River about ¼ mile northwest from mouth of Blackhole Creek and nearly abreast of Cypress Creek. (See Chart No. 2.)

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

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

References.—

"Horn"	(S 65° 33' W)	½ mile.
REFERENCE STATION.....	S by W	11.86 meters.

HORN (MAGOTHY RIVER).

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

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

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

References.—

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

TAIL.

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

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

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

References.—

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

FERRY.

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

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

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

References.—

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

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

HUDDLE.

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

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

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

References.—

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

REVELL.

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

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

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

References.—

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

PURSE.

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

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

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

References.—

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

MAGOTHY.

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

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

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

References.—

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

CORN.

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

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

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

References.—

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

SANDY POINT LIGHT.

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

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

References.—

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

RING.

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

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

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

References.—

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

BAY SIDE.

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

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

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

References.—

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

CLUMP.

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

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

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

References.—

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

WASH.

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

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

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

References.—

	°	'	"	
"Sandy Point Light" (N 36° 19' W).....	0	00	00	3 $\frac{1}{2}$ miles.
West chimney of house.....	116	24	..	$\frac{1}{2}$ mile.
East chimney of white house.....	149	38	..	400 yards.
REFERENCE STATION.....	156	11	10	12.90 meters.
Cupola on barn.....	164	09	..	400 yards.
Lone tree (2 $\frac{1}{2}$ feet diameter).....	195	32	..	150 yards.
Tree (15 inches diameter).....	208	34	..	175 yards.
East chimney on white house.....	234	38	..	$\frac{1}{2}$ mile.
Thomas Point Light.....	260	32	..	7 miles.

HACKETT.

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

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

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

References.—

	°	'	"	
"Greenbury Light" (S 52° 55' W).....	0	00	00	2 miles.
St. Anne's Church spire	24	12		3¼ miles.
Statehouse Dome.....	28	34		3¼ miles.
Chapel Dome (Naval Academy).....	31	08		3 miles.
REFERENCE STATION.....	57	05	00	8.68 meters.
North chimney of red roof house.....	120	15		¼ mile.
Sandy Point Light.....	172	37		3 miles.

SPIT.

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

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

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

References.—

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

CHASE (WHITEHALL BAY).

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

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

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

References.—

	°	'	"	
"Greenbury Light" (S 26° 22' W).....	0	00	00	2 miles.
Lone tree (2 feet diameter).....	150	49		300 yards.
REFERENCE STATION.....	191	27	00	8.87 meters.
Center of Whitehall wharf house.....	230	49		¼ mile.
West chimney on red roof house (opposite shore).....	265	50		¾ mile.
West edge of small shanty on beach (opposite shore).....	278	18		½ mile.

GREENBURY.

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

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

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

References.—

	°	'	"	
"Greenbury Light" (S 7° 20' E).....	0	00	00	250 yards.
Nail in dead cherry tree (12 inches diameter) ..	6	37	..	11.55 meters.
Statehouse Dome.....	107	03	..	1½ miles.
Chapel Dome (Naval Academy).....	114	37	..	1½ miles.
Center of water tower opposite Naval Academy. 144	32	..	..	1½ miles.

GREENBURY POINT LIGHT.

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

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

References.—

	°	'	"	
"Greenbury"	N 7	20 W	.....	250 yards.

FORT.

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

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

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

References.—

	°	'	"	
"Horn" (S 38° 20' W)	0	00	00	¾ mile.
Saint Anne's Church spire	30	11	..	1¼ miles.
Statehouse Dome.....	41	23	..	1¼ miles.
Chapel Dome (Naval Academy)	48	06	..	1 mile.
South chimney of yellow house (red roof)	88	37	..	80 yards.
REFERENCE STATION.....	150	00	40	9.12 meters.
Greenbury Light.....	296	12	..	1¼ mile.

BLUFF (SEVERN RIVER).

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

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

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

References.—

	°	'	"	
"Hospital" (N 80° 00' W)	0	00	00	¾ mile.
West chimney of yellow house	51	13	..	¼ mile.
Nail in blaze on locust tree (18 inches diameter).....	106	09	..	25.93 meters.
REFERENCE STATION.....	126	56	20	11.84 meters.
Nail in blaze on locust tree (8 inches diameter) .	163	46	..	26.27 meters.
Statehouse Dome.....	318	54	..	¾ mile.
Chapel Dome (Naval Academy)	322	01	..	¾ mile.
Saint John's College.....	329	25	..	¾ mile.

BRICE.

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

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

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

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

KNOB.

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

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

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

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

SPRING.

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

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

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

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

COOL.

Locality.—Northeast shore of Severn River on point between Chase and Cool Spring creeks and about 1¼ miles above the Maryland Electric Railway Bridge. (See Chart No. 2.)

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

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

<i>References.</i> —	°	'	"	
"Weems" (S 26° 14' E)	0	00	00	¾ mile.
Chimney on white house (opposite shore).....	13	23	..	½ mile.
Chimney on small white shanty (opposite shore).....	53	39	..	½ mile.
Chimney on yellow house (opposite shore).....	139	15	..	1 mile.
West chimney of house.....	180	42	..	½ mile.
Nail in blaze on persimmon tree (4 inches diameter)	184	21	..	16.50 meters.
REFERENCE STATION	221	29	10	7.25 meters.
Nail in blaze on oak tree (12 inches diameter). .	311	04	..	14.82 meters.
Water tower (opposite Naval Academy).....	336	13	..	2½ miles.

CHASE (SEVERN RIVER).

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

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

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

<i>References.</i> —	°	'	"	
"Cool" (S 47° 38' E).....	0	00	00	½ mile.
Chimney on yellow house (opposite shore)....	30	44	..	½ mile.
Chimney on small shanty (opposite shore)....	38	01	..	½ mile.
Middle window of yellow house (abreast of station).....	77	02	..	¼ mile.
North chimney of red roof house (opposite shore)	102	04	..	¼ mile.
Chimney on yellow house (opposite shore)....	146	26	..	½ mile.
REFERENCE STATION	241	31	30	7.05 meters.
North chimney of white house	306	34	..	1 mile.

POINT.

Locality.—Northeast shore of Severn River about 1½ mile east-southeast of Brewer Point and on second point northwest of mouth of Chase Creek. (See Chart No. 2.)

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

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

<i>References.</i>	°	'	"	
"Salt" (S 1° 44' W).....	0	00	00	¾ mile.
Chimney on yellow house (opposite shore)...	43	24	..	½ mile.
Southwest corner of house	139	43	..	¾ mile.
Nail in apple tree (12 inches diameter)	233	34	..	12.55 meters.
Windmill.....	255	15	..	250 yards.
Nail in apple tree (15 inches diameter)	280	38	..	5.70 meters.

BIGHT.

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

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

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

References.—

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

ARNOLD.

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

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

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

References.—

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

SWAN.

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

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

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

References.—

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

HIGH.

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

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

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

References.—

	°	'	"	
"Swan" (S 33° 19' E)	0	00	00	¾ mile.
Chimney on house (opposite shore)	48	35	.....	1 ½ miles.
Chimney on cottage on Long Point	65	31	.....	1 mile.
Green water tower	154	44	.....	¾ mile.
Nail in blaze on pine tree (8 inches diameter) ..	193	07	.....	7.98 meters.
Southwest corner dancing pavilion	221	57	.....	25 yards.
REFERENCE STATION	235	07	20	8.66 meters.
Nail in blaze on pine tree (7 inches diameter) ..	254	07	.....	7.58 meters.

CEDAR (SEVERN RIVER).

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

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

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

References.—

	°	'	"	
"High" (S 76° 39' E)	0	00	00	1 mile.
Chimney on red roof of cottage	2	29	.....	1 ¼ miles.
Chapel Dome (Naval Academy)	39	31	.....	7 miles.
Chimney on old house	210	57	.....	1 mile.
Chimney on yellow house	230	58	.....	½ mile.
Nail in blaze on locust tree (3 inches diameter) ..	288	17	.....	10.56 meters.
REFERENCE STATION	302	20	10	7.92 meters.
Green water tower	339	33	.....	½ mile.

SHARP.

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

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

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

References.—

	°	'	"	
"High" (N 63° 51' E)	0	00	00	1 mile.
Cupola on brown wharf (opposite shore)	6	27	.....	1 mile.
Chimney on red-roof cottage (opposite shore) ..	14	32	.....	1 mile.
Nail in blaze on locust tree (3 inches diameter) ..	132	46	.....	8.03 meters.
REFERENCE STATION	158	10	30	5.31 meters.
Chimney on yellow house	272	31	.....	1 ½ miles.
Green water tower (opposite shore)	317	24	.....	1 mile.

LONG.

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

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

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

References.—

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

ISLAND.

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

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

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

References.—

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

BAY (SEVERN RIVER).

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

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

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

References.—

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

BREWER (SEVERN RIVER).

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

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

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

References.—

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

CLEM.

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

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

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

References.—

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

SALT.

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

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

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

References.—

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

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

References.—

	°	'	"	
"Weems" (N 47° 39' W)	0	00	00	1 mile.
Center chimney of lead-colored house (opposite shore)	21	47		$\frac{3}{4}$ mile.
North chimney of yellow house (opposite shore)	49	30		$\frac{1}{2}$ mile.
Blaze on pine tree (12 inches diameter)	161	26		10.30 meters.
Chapel Dome (Naval Academy)	206	15		1 mile.
Hospital cupola	214	10		$\frac{3}{4}$ mile.
Blaze on poplar tree (12 inches diameter)	326	46		7.18 meters.

HOSPITAL CUPOLA (NAVAL ACADEMY).

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

Marks. Center point of cupola on new Naval Hospital.

References.—None necessary.

FLAGSTAFF (NAVAL ACADEMY BOATHOUSE).

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

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

References. None necessary.

STATEHOUSE DOME (ANNAPOLIS).

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

Marks.—Center of Statehouse Dome.

References.—None necessary.

ST. ANNE'S CHURCH SPIRE (ANNAPOLIS).

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

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

References.—None necessary.

CATHOLIC CHURCH SPIRE (ANNAPOLIS).

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

Marks.—Center of spire on Catholic Church.

References.—None necessary.

ST. JOHN'S COLLEGE CUPOLA (ANNAPOLIS).

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

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

References.—None necessary.

HORN (SEVERN RIVER).

Locality.—Southwest shore of Severn River, on Horn Point, about $\frac{3}{4}$ mile southeast of wharves in Annapolis Harbor and on south side of entrance to Spa Creek. (See Chart No. 2.)

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

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

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

START.

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

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

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

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

GRAM.

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

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

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

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

TOLLY.

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

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

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

References.—	°	'	"	
"Greenbury Light" (N. 6° 12' W).....	0	00	00	13 $\frac{1}{4}$ miles.
Peak of Whitehall house.....	21	15		4 meters.
Nail in blaze on holly tree (12 inches diameter).....	205	14		9.65 meters.
REFERENCE STATION.....	229	35	30	10.86 meters.
Nail in blaze on swamp-oak tree (18 inches diameter).....	258	12		10.97 meters.
Chapel Dome (Naval Academy).....	331	05		3 $\frac{1}{2}$ miles.
Water tower (opposite Naval Academy).....	346	13		3 $\frac{1}{2}$ miles.

BAY RIDGE STACK.

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

Marks. Center of highest part of brick smokestack.

References.—None necessary.

CRANEY.

Locality.—Eastern shore of bay on west side of Kent Island, about $\frac{1}{2}$ mile north of Craney Creek and $4\frac{1}{2}$ miles east of Tolly Point. (See Chart No. 3.)

Observed station is 3 feet above and 30 feet back from high-water mark, on a low sandy cultivated field. A group of farm buildings stand about $\frac{1}{4}$ mile away. Cement monument marking reference station is 4.88 meters east-northeast of observed station.

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

References.	°	'	"	
"Thomas Point Light" (S 56° 45' W).....	0	00	00	4 $\frac{3}{4}$ miles.
Greenbury Light.....	57	27	30	5 $\frac{1}{4}$ miles.
Sandy Point Light.....	114	26	30	5 $\frac{1}{4}$ miles.
REFERENCE STATION.....	208	51	10	4.88 meters.
Cupola on barn.....	258	11		$\frac{1}{4}$ mile.
Extreme south tangent to Kent Island.....	310	52		6 miles.

COTTAGE.

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

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

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

References.—	°	'	"	
"Thomas Point Light" (S 41° 12' E).....	0	00	00	2 miles.
Tangent to Thomas Point.....	15	33		1 mile.
Green ball on north end of playhouse.....	26	55		80 yards.
Flag pole on pavilion.....	61	10		
REFERENCE STATION.....	114	57	10	13.70 meters.
Nail in blaze on oak tree (12 inches diameter).....	115	07		15.50 meters.
Peak of circular red roof bath house in water.....	211	01		300 yards.
Stack at Bay Ridge.....	236	04		1 $\frac{1}{4}$ miles.
North flag pole on wharf.....	305	37		75 yards.

THOMAS.

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

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

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

References.

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

THOMAS POINT LIGHT.

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

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

References.

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

ARUNDEL.

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

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

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

References.

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

HILL.

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

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

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

References.—

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

SWITCH.

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

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

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

References.—

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

WAGGAMAN.

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

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

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

References.—

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

WAGGAMAN WINDMILL.

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

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

References.—None necessary.

GINGER.

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

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

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

References.—

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

XIMO.

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

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

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

References.—

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

YAZOO.

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

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

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

References.—

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

TAYLOR.

Locality.—North shore of upper South River about $\frac{1}{4}$ mile above County bridge and opposite the entrance to Beards Creek. (See Chart No. 3.)

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

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

References.—

	°	'	"	
"Larramore" (S 57° 15' E).....	0	00	00	$\frac{1}{4}$ mile.
West chimney of white house (opposite shore).....	11	04		$\frac{1}{2}$ mile.
North chimney of yellow house (opposite shore).....	132	09		$\frac{1}{4}$ mile.
REFERENCE STATION.....	139	56	50	4.22 meters.
Nail in persimmon tree (4 inches diameter).....	142	15		5.11 meters.
Nail in cedar tree (15 inches diameter).....	248	31		45 yards.
Red post on porch at Edgewater post-office.....	332	44		1 mile.
Lone cedar tree opposite shore.....	352	54		300 yards.

LARRAMORE.

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

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

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

References.—

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

BREWER (SOUTH RIVER).

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

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

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

References.—

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

ALMSHOUSE.

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

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

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

References.—

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

ALMSHOUSE (LIGHTNING ROD).

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

Marks.—Lightning rod on south chimney of almshouse.

References.—None necessary.

CEDAR (SOUTH RIVER).

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

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

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

References.—

	°	'	"	
"Switch" (N 89° 57' E).....	0	00	00	¼ mile.
REFERENCE STATION.....	122	14	10	5.61 meters.
Nail in blaze on twin cedar tree (4 inches diameter).....	133	24		5.69 meters.
Nail in blaze on locust tree (4 inches diameter).....	213	29		5.11 meters.
South chimney on almshouse.....	223	06		1 mile.
Flagstaff on Waggaman Clubhouse.....	253	54		1 mile.
Waggaman windmill.....	256	43		1 mile.
North chimney on brown house (opposite shore).....	314	33		¾ mile.

MAYO.

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

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

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

References.—

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

	°	'	"	
North chimney on Waggaman house.....	192	54	...	2½ miles.
South chimney on red roof house (opposite shore).....	223	53	...	¾ mile.
Green water tower (South River Club).....	270	50	...	1½ miles.
North peak of old barn.....	281	00	...	1 mile.

SELBY.

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

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

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

<i>References.</i> —	°	'	"	
"Arundel" (N 81° 27' E).....	0	00	00	1¼ miles.
Locust stump (1½ feet high).....	7	30	...	11.30 meters.
Thomas Point Light.....	20	38	...	3 miles.
Nail in blaze on locust tree (12 inches diameter).....	113	10	...	10.65 meters.
REFERENCE STATION.....	137	31	00	7.81 meters.
Water tower (South River Club).....	276	31	...	2 miles.
Peak of red roof house (opposite shore).....	278	23	...	1½ miles.
Peak of white house (opposite shore).....	307	50	...	1½ miles.

GOWAN.

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

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

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

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

DUTCHMAN.

Locality.—North side of entrance to West River on Dutchman Point between shore of bay and Rhode River. (See Chart No. 3.)

Observed station is on top of a bank 12 feet high and is 10 feet back from the edge. A small lone locust tree stands about 11 yards northwest of station. Cement monument marking reference station is 10.61 meters north of observed station.

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

<i>References.</i> —	°	'	"	
"Curtis" (S 29° 37' E).....	0	00	00	1¼ miles.
Peak of wharf house at Nowell Pier.....	21	34	...	1 mile.
Chimney on small white house.....	85	17	...	½ mile.
Cupola on large building.....	137	22	...	1 mile.
Nail in blaze on locust tree (2 inches diameter).....	155	03	...	10.25 meters.
Chimney on red-roof house.....	184	22	...	¼ mile.
REFERENCE STATION.....	189	50	30	11.61 meters.

CATO.

Locality. North shore of West River on point at east side of entrance to Rhode River. (See Chart No. 3.)

Observed station is the extreme west end of a low sand point and is awash at high tide. A bank 12 feet high is 75 yards east of station. Cement monument marking reference station is 20.01 meters east-southeast of observed station.

Marks.—Observed station is an auger hole in a pine stub projecting 2 inches above the ground. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Curtis" (S 35° 25' E).....	0	00	00	1 ¼ miles.
Peak of wharf house (Nowell Pier).....	20	41	..	1 mile.
Chimney on white house (opposite shore)....	83	00	..	½ mile.
Cupola on large building.....	145	34	..	1 mile.
South peak of packing house.....	161	31	..	1 mile.
Peak of Carr's wharf house.....	189	57	..	1 ¼ miles.
Chimney on red-roof house.....	213	50	..	¼ mile.
REFERENCE STATION.....	310	52	20	20.01 meters.

DELTA.

Locality.—East shore of Rhode River on point south of entrance to Cadle Creek, about ½ mile north of mouth of Rhode River. (See Chart No. 3.)

Observed station is in a cultivated field about 300 yards southeast of Stiner's house and 15 yards back from edge of a bluff 12 feet high. Cement monument marking reference station is 4.32 meters northeast of observed station.

Marks.—Observed station is an auger hole in a pine stub. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Rhode" (S 26° 42' W).....	0	00	00	¼ mile.
Cupola on large building (opposite shore)....	55	11	..	½ mile.
South peak of old packing house (opposite shore).....	69	12	..	¼ mile.
Southeast corner of Carr's wharf house.....	124	31	..	¼ mile.
Chimney on yellow house.....	149	43	..	¼ mile.
REFERENCE STATION.....	193	09	10	4.32 meters.
Chimney on red-roof house.....	280	50	..	300 yards.
Nail in blaze on small locust tree (3 inches diameter).....	354	41	..	17.19 meters.

ETNA.

Locality.—East shore of Rhode River, about 400 yards north of mouth to Cadle Creek. (See Chart No. 3.)

Observed station is 6 feet back from edge of a bank 12 feet high and is in front of the second house north of Cadle Creek, which stands about 25 yards northeast of station. Cement monument marking reference station is 5.40 meters northeast of observed station.

Marks.—Observed station is an auger hole in a pine stub projecting 3 feet above the ground. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Turf" (S 69° 27' W).....	0	00	00	¼ mile.
North peak of Murray's wharf house.....	14	08	..	1 mile.
West chimney of house.....	40	18	..	1 ¼ miles.
Southwest corner of Carr's wharf house.....	72	05	..	¼ mile.
South chimney on red-roof house.....	83	31	..	¼ mile.
Northwest corner of picket fence.....	98	53	..	17.45 meters.
REFERENCE STATION.....	152	17	20	5.40 meters.
Southwest corner of picket fence.....	173	00	..	11.85½ meters.

CALF.

Locality.—Northern shore of upper Rhode River between Whitmarsh and Waters creeks about $\frac{1}{4}$ mile west by north of Carr's wharf. (See Chart No. 3.)

Observed station is 25 feet back from edge of a bank 15 feet high. It is abreast of High Island and about 300 yards northwest of the extreme southeast end of a point of land between Whitmarsh and Waters creeks. Cement monument marking reference station is 4.96 meters northeast of observed station.

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

References.—

	°	'	"	
"Turf" (S 30° 10' E)	0	00	00	$\frac{1}{2}$ mile.
Cupola on large house (opposite shore).....	55	07	..	$\frac{1}{2}$ mile.
Chimney on small white house (opposite shore). 115	05	..	..	$\frac{1}{2}$ mile.
West chimney on red-roof house (first hill north)	129	25	..	1 mile.
Nail in blaze on pine tree (4 inches diameter) ..	201	48	..	5.17 meters.
REFERENCE STATION.....	242	17	20	4.96 meters.
Southwest corner of Carr's wharf.....	307	46	..	300 yards.
Nail in blaze on small white oak tree (2 inches diameter)	327	30	00	9.15 meters.

TURF.

Locality.—West shore of Rhode River on point at right-angle bend in river and $\frac{1}{2}$ mile south of Carr's wharf. (See Chart No. 3.)

Observed station is on a low marshy point just above high-water mark. A large frame tobacco barn stands about $\frac{1}{4}$ mile southwest of station. Cement monument marking reference station is 4.83 meters west of observed station.

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

References.—

	°	'	"	
"Etna" (N 69° 27' E).....	0	00	00	$\frac{1}{4}$ mile.
Chimney on white house (opposite shore)....	25	47	..	$\frac{1}{2}$ mile.
Chimney on red-roof house.....	58	29	..	1 mile.
Southeast corner of old barn.....	149	04	..	$\frac{1}{4}$ mile.
Cupola on large building.....	157	36	..	$\frac{1}{4}$ mile.
REFERENCE STATION.....	179	49	00	4.83 meters.

CUPOLA.

Locality.—On west side of Rhode River about $\frac{3}{4}$ mile above its mouth and $\frac{1}{4}$ mile back from shore. (See Chart No. 3.)

Marks.—Center of spindle on belfry cupola on dark colored frame barn. Bell in cupola under spindle.

References.—None necessary.

RHODE.

Locality.—West shore of Rhode River on point about $\frac{1}{2}$ mile north of its mouth. (See Chart No. 3.)

Observed station is on a low sand point just above high-water mark and about 60 feet west of the extreme east end of point. Cement monument marking reference station is 7.39 meters west of observed station.

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

<i>References.</i> —	°	'	"	
"Delta" (N 26° 40' E).....	0	00	00	½ mile.
Chimney on red-roof house	31	14		¼ mile.
West chimney on red-roof house	146	08		1½ miles.
Nail in blaze on twin locust tree (4 inches di- ameter).....	181	59		27.57 meters.
Nail in blaze on locust tree (5 inches diameter)	208	14		24.25 meters.
REFERENCE STATION	216	02	20	7.39 meters.
Cupola on large building	261	38		½ mile.

CHES.

Locality.—North shore of West River on point at west side entrance to Rhode River and about 300 yards east of entrance to Chestons Creek. (See Chart No. 3.)

Observed station is 21 feet back from the edge of a bank 15 feet high. A twin locust stump stands about 2 yards southeast of station. Cement monument marking reference station is 8.71 meters northwest of observed station.

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

<i>References.</i> —	°	'	"	
"Dutchman" (N 49° 52' E).....	0	00	00	¾ mile.
Chimney on small house (opposite shore)	101	19		1 mile.
West chimney on red-roof house (opposite shore).....	115	41		1 mile.
East chimney on white house (opposite shore)	157	13		1 mile.
Chimney on small house	219	35		200 yards.
REFERENCE STATION	253	53	30	8.71 meters.

ALPHA.

Locality.—North shore of West River between Scaffold and Chestons creeks and about ¼ mile north of Cedar Point. (See Chart No. 3.)

Observed station is about 10 feet above and 5 feet back from high-water mark. It is about 100 yards east of Scaffold Creek and 200 yards west of a small white shanty. Cement monument marking reference station is 8.26 meters north of observed station.

Marks.—Observed station is an auger hole in a hickory stump. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Cove" (S 1° 21' E).....	0	00	00	¾ mile.
Tangent to Comallor Point	20	57		1 mile.
Peak of white house	68	17		½ mile.
Nail in blaze on hickory tree (7 inches diam- eter)	135	00		11.33 meters.
Nail in blaze on black oak tree (7 inches diameter).....	163	46		9.74 meters.
REFERENCE STATION	167	01	00	8.26 meters.
Nail in blaze on black oak	230	15		7.58 meters.
West chimney on house (opposite shore)	354	54		1 mile.

SHELL.

Locality.—West shore of Upper West River about 300 yards north of entrance to Cox Creek and ½ mile west of Cedar Point. (See Chart No. 3.)

Observed station is on an oyster shell bank about 8 feet above and 3 feet back from high-water mark. Cement monument marking reference station is 11.21 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub projecting 18 inches above ground. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Cove" (S 88° 05' E)	0	00	00	1½ mile.
Chimney on small white house (opposite shore) ..	11	30	..	1½ mile.
North chimney on red-roof house (opposite shore)	41	30	..	¾ mile.
West chimney on house belonging to Mr. Lerch (opposite shore)	68	24	..	1 mile.
Nail in blaze on gum tree (2 feet diameter) ..	120	07	..	10.34 meters.
REFERENCE STATION	200	02	10	11.21 meters.
Nail in blaze on cedar tree (5 inches diameter) ..	213	52	..	10.60 meters.
Southwest corner of white shanty	298	07	..	1¼ miles.

COUNALLOR.

Locality.—West shore of upper West River about 250 yards north of steamboat wharf at Galesville and on south side of entrance to Cox Creek. (See Chart No. 3.)

Observed station is about 22 feet back from edge of a bluff 12 feet high. An old dead stump stands about 6 feet to the south of station. Cement monument marking reference station is 10.93 meters west of observed station.

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

<i>References.</i> —	°	'	"	
"Apple" (S 53° 50' E)	0	00	00	¼ mile.
Lerch's windmill	10	21	..	½ mile.
East chimney on Mr. Hyde's house	50	15	..	¾ mile.
Chimney on Chalk Point wharf house	72	21	..	¼ mile.
Chimney on Galesville wharf	80	20	..	250 yards.
East peak on Wayson's store	112	28	..	250 yards.
REFERENCE STATION	159	27	55	10.93 meters.
Cedar tree	207	40	..	18.25 meters.

CHALK.

Locality.—Upper West River on west side of Chalk Point about ¼ mile southeast of Galesville and 200 yards east of Chalk Point steamboat wharf. (See Chart No. 3.)

Observed station is about 4 feet above and 27 feet back from high-water mark. It is about 8 yards west of a blazed locust tree standing on edge of bank. Cement monument marking reference station is 8.15 meters west of observed station.

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

<i>References.</i> —	°	'	"	
"Apple" (N 49° 35' E)	0	00	00	¼ mile.
Lerch's windmill	25	12	..	½ mile.
Nail in blaze on twin locust tree	49	48	..	7.32 meters.
Chimney on yellow house (opposite shore) ..	67	11	..	¾ mile.
East chimney on Mr. Hyde's house	124	35	..	¼ mile.
REFERENCE STATION	201	59	35	8.15 meters.
Chimney on small yellow house	216	43	..	100 yards.
Chimney on Galesville wharf house	284	27	..	300 yards.

LERCH WINDMILL.

Locality.—Upper West River about ½ mile east of Chalk Point and ¾ mile southeast of Galesville near house of Mr. Lerch.

Marks.—Center of shaft at highest point of windmill.

References.—None necessary.

APPLE.

Locality.—East shore of Upper West River, abreast of Galesville, and about $\frac{3}{4}$ mile south by west of Cedar Point. (See Chart No. 3.)

Observed station is 28 feet back from edge of bank, 8 feet high. It is about 45 yards east of the southwest corner of V. Hartge's house. Cement monument marking reference station is 7.17 meters east of observed station.

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

References.—

	°	'	"	
"Chalk" (S 49° 35' W)	0	00	00	$\frac{1}{4}$ mile.
Chimney on Chalk Point wharf house.....	16	45		$\frac{1}{4}$ mile.
Chimney on Galesville wharf house.....	40	00		$\frac{1}{2}$ mile.
East peak of Wayson's store.....	41	36		$\frac{1}{2}$ mile.
Chimney on store	64	27		$\frac{1}{2}$ mile.
Southwest corner of Hartge wharf house.....	154	38		$\frac{1}{2}$ mile.
Apple tree (6 inches diameter).....	203	02		7.22 meters.
REFERENCE STATION	236	25	30	7.17 meters.
Twin apple tree.....	294	01		11.40 meters.

COVE.

Locality.—South shore of West River, about $\frac{3}{4}$ mile northeast of Galesville, on Cedar Point. (See Chart No. 3.)

Observed station is on a low narrow neck of land, about 125 yards from its extreme south end. It is about 6 inches above high-water mark and 5 yards west of a blazed cedar stump. Cement monument marking reference station is 5.41 meters northeast of observed station.

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

References.—

	°	'	"	
"Couallor" (S 47° 00' W).....	0	00	00	$\frac{3}{4}$ mile.
Southwest corner of small shanty (opposite shore).....	137	40		$\frac{3}{4}$ mile.
Chimney on white house (opposite shore)....	156	41		1 mile.
REFERENCE STATION	171	09	30	5.41 meters.
Nail in blaze on cedar stump (15 inches diameter)	196	03		4.60 meters.
Northwest corner of Hartge wharf house	316	46		350 yards.
Lerch's windmill.....	318	26		1 mile.

CURTIS.

Locality.—South side of entrance to West River on west side of Curtis Point. (See Chart No. 3.)

Observed station is about 10 feet above and 6 feet back from edge of bank. It is north of entrance to Parish Creek and about 250 yards northwest of a house standing back in the woods. A line of sight was cut through woods in order to see Bloody Point Bar Light. Cement monument marking reference station is about 10.82 meters southeast of observed station.

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

References.—

	°	'	"	
"Dutchman" (N 29° 36' W).....	0	00	00	1 $\frac{1}{4}$ miles.
Peak of white house (opposite shore).....	25	43		2 miles.
Nail in blaze on gum tree (4 inches diameter). 148	05			13.63 meters.
REFERENCE STATION	156	04	20	10.82 meters.
Nail in blaze on locust tree (5 inches diameter) 197	56			15.65 meters.
South peak of wharf house.....	273	32		$\frac{1}{2}$ mile.
East chimney of yellow house.....	281	50		$\frac{3}{4}$ mile.

HORSESHOE.

Locality.—On shore of bay about $\frac{1}{4}$ mile south of eastern edge of Horseshoe Point. (See Chart No. 3.)

Observed station is on low marshy point nearly awash at high tide. It is about 300 yards east of a yellow house with three lightning rods. This house is surrounded by cedar trees. Cement monument marking reference station is 11.24 meters northwest of observed station.

Marks.—Observed station is a nail in a stub set in center of a tile pipe projecting 2 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Franklin" (S 15° 16' W).....	0	00	00	1½ miles.
South chimney on white house.....	35	58		½ mile.
Chimney on yellow house.....	56	53		300 yards.
REFERENCE STATION.....	91	30	50	11.24 meters.
Chimney on small house.....	124	05		300 yards.
West chimney of house.....	131	54		350 yards.

BLOODY POINT BAR LIGHT.

Locality.—Off eastern shore of bay, about $1\frac{1}{4}$ miles due west of the southernmost point of Kent Island and about $\frac{3}{4}$ mile west-southwest from mouth of Bloody Point Creek. (See Chart No. 3.)

Marks.—Center point of black lantern on brown caisson structure known as Bloody Point Bar Light.

References.—

"Horseshoe" (N 87° 45' W).....	5¼ miles.
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FRANKLIN.

Locality.—Western shore of bay on Franklin Point, about halfway between West River and Herring Bay. (See Chart No. 4.)

Observed station is on low point, covered with tufts of marsh grass, situated between the marsh and shore. It is just above high-water mark and about 80 yards in front of the northeast point of a round grove of small oak trees. Cement monument marking reference station is 6.36 meters northwest of observed station.

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

References.—

	°	'	"	
"Horseshoe" (N 15° 15' E).....	0	00	00	1½ miles.
Black oak tree at southeast point of round grove of trees (12 inches diameter).....	217	50		100 yards.
White oak tree abreast of station (2 feet diameter).....	248	55		80 yards.
REFERENCE STATION.....	274	47	40	6.36 meters.
Peak of small white shanty.....	342	09		¾ mile.
South peak of yellow house back of Horseshoe Point.....	353	22		1½ miles.

NUT.

Locality.—Western shore of bay, about $\frac{3}{4}$ miles northeast of mouth of Broadwater Creek. (See Chart No. 4.)

Observed station is on low marshy point, about 50 feet west of its extreme eastern end. A large brick house stands on edge of woods, about $\frac{1}{4}$ mile northwest of station. Cement monument marking reference station is 13.40 meters northwest of observed station.

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

References.—

	°	'	"	
"Franklin" (N 33° 37' E)	0	00	00	1¼ miles.
Peak of white barn on south side Broadwater Creek	200	58		1½ miles.
REFERENCE STATION	260	28	10	13.40 meters.
North chimney of brick house	273	46		¼ mile.
East peak of old barn	330	41		¾ mile.
East tangent to grove on Franklin Point	359	00		1¼ miles.

BROAD.

Locality.—Western shore of bay, on south side of entrance to Broadwater Creek, on the extreme north end of a narrow neck of land between the creek and the bay. (See Chart No. 4.)

Observed station is about 25 feet back from edge of bank 4 feet high. A number of cedar trees stand 20 yards northwest of station. Cement monument marking reference station is 13.29 meters northwest of observed station.

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

References.—

	°	'	"	
"Nut" (N 43° 14' E)	0	00	00	1 mile.
North chimney on house across Broadwater Creek	201	21		¼ mile.
Chimney on house (opposite shore)	260	24		300 yards.
Nail in blaze on cedar tree				21.10 meters.
REFERENCE STATION	264	42	20	13.29 meters.
Nail in blaze on cedar tree on edge of bank (12 inches diameter)	289	07		30.25 meters.
East chimney of brown house (opposite shore)	295	19		½ mile.

PARKER.

Locality.—Western shore of bay, on north side of entrance to Herring Bay. (See Chart No. 4.)

Observed station is on a small detached sand island south of Parker Island, about 25 yards from the extreme south end and just above high-water mark. Cement monument marking reference station is 5.57 meters north of observed station.

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

References.—

	°	'	"	
"Fairhaven" (S 47° 11' W)	0	00	00	2 miles.
Chimney on white house	29	03		1 mile.
Chimney on small house	63	42		¼ mile.
West chimney on small white house	85	21		¼ mile.
West chimney on red-roof house	96	43		½ mile.
East chimney on red-roof house	115	04		¼ mile.
REFERENCE STATION	132	30	10	5.57 meters.

HOPKINS.

Locality.—North side of Herring Bay, on east side of entrance to Herring Creek and about 1½ miles north by west of Fairhaven Wharf. (See Chart No. 4.)

Observed station is 2 feet above and 15 feet back from high-water mark, and is nearly on line with south face of house standing just east of station. Cement monument marking reference station is 5.15 meters northwest of observed station.

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

<i>References.</i> —	°	'	"	
"Fairhaven" (S 27° 28' W).....	0	00	00	1¼ miles.
Chimney on small house (opposite shore)....	16	25		¼ mile.
South chimney on white house (opposite shore).....	93	21		¼ mile.
South chimney on yellow house (opposite shore).....	102	00		¼ mile.
REFERENCE STATION.....	105	44	35	5.15 meters.
West chimney on small white house.....	124	37		150 yards.
Northwest corner of house.....	172	19		16.39 meters.
Southwest corner of house.....	192	11		15.17 meters.

FAIRHAVEN.

Locality.—Western shore of Herring Bay on prominent bold hill about ¼ mile back from shore and ¾ mile west by north of Fairhaven wharf. (See Chart No. 4.)

Observed station is about 25 yards south of a lone chestnut tree 3 feet in diameter and about 100 yards north of highway to Friendship. Cement monument marking reference station is 6.08 meters north of observed station.

Marks.—Observed station is the center of a 4-inch tile pipe with top 8 inches below the surface. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Hopkins" (N 27° 28' E).....	0	00	00	1¼ miles.
Cupola on old Fairhaven Hotel.....	45	44		½ mile.
East chimney on yellow house.....	51	06		½ mile.
West peak of Fairhaven wharf house.....	98	49		1 mile.
Chimney on small house close to shore.....	113	25		½ mile.
Post of rail fence.....	241	05		14.53 meters.
Nail in blaze on lone chestnut tree (3 feet diameter).....	346	37		25.78 meters.
REFERENCE STATION.....	351	49	50	6.08 meters.

HOLLAND.

Locality.—Western shore of bay on south side of entrance to Herring Bay about 30 yards west of Holland Point. (See Chart No. 4.)

Observed station is 5 feet back from top of a bank 7 feet high. Two large blazed trees stand south and west of station at distance 12 and 25 yards respectively. Cement monument marking reference station is 12.88 meters southwest of observed station.

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

<i>References.</i> —	°	'	"	
"Fairhaven" (N 48° 13' W).....	0	00	00	2½ miles.
Nail in blaze on red oak tree (2½ feet diameter).....	238	49		11.17 meters.
REFERENCE STATION.....	262	05	00	12.88 meters.
Nail in blaze on red oak tree (2½ feet diameter).....	286	55		22.63 meters.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY.

INSTRUCTIONS.

The two following letters, together with the laws^a of the United States relating to the subject, constitute the "instructions" of the representative of the Survey. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of natural oyster bars. The "free hand" permitted by these orders proved very beneficial and was greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His Excellency Hon. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the commissioners, prepare a programme of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

Very respectfully,

O. H. TYTMANN, *Superintendent.*

Capt. C. C. YATES,
U. S. C. and G. S. Steamer "Endeavor," Baltimore, Md.

HOUSE BOAT "OYSTER."

While arranging to turn over the command of the steamer *Endeavor*, the representative of the Survey, acting under preliminary instructions from the Superintendent, was engaged in frequent consultation with the Shell Fish Commissioners in reference to the programme of future work. In addition to these duties, he undertook for the commissioners the planning and supervision necessary to convert the old side-wheel steamer *Thomas L. Worthley* into a house boat for the surveying parties of both the Commission and the Government.

^a For copies of these laws see "Introduction" to this publication.

The *Worthley*, now called the house boat *Oyster*, was in excellent condition when purchased by the Commission. The keelsons and timbers were sound and the upper works strong. After the removal of the old engine and boiler, the house boat was docked and her hull thoroughly examined. The outside planking below the water line was found in good condition, and although it was recalced, it was done as an additional precaution, the hull having been absolutely water-tight from the day of purchase.

The *Oyster* is about 135 feet over all and 35 feet in beam. The main deck contains living quarters for 27 men, the officers mess room and the galley. The upper deck has 11 staterooms, 5 for the 3 commissioners and their 2 hydrographic engineers, 4 for the Coast Survey officers, 1 for the representative of the U. S. Bureau of Fisheries, and 1 for the local county oyster commissioner. Besides these rooms, there are located on this deck a large drafting room, a laboratory for oyster investigations, and an office room. Coal for the two Government launches and the galley is stored in the hold, which also contains fresh-water tanks having a capacity of about 7,000 gallons. Signal lumber is carried on the main deck aft of the officers' mess room.

As a whole, the *Oyster* is plainly and practically equipped for the work to be done. She has added much to the amount of the surveying accomplished during the season, and the Coast and Geodetic Survey representative greatly appreciates the practical advantages furnished to his party by their quarters on the house boat. When the large party of the combined surveying forces is taken into consideration with the limited accommodations usually obtainable on shore, the attending difficulties of a scattered party, the uncertain location and supply of coal and water for launches and sufficient lumber for signals, it is easily to be seen that the amount of work accomplished would have been reduced greatly, if there had been no such house boat as the *Oyster* to supply all requirements of the surveying operations.

With reasonable care and repairs, the *Oyster* will be a valuable asset to the Commission at the completion of the oyster survey of the State, besides having paid her first cost several times over in both quality and quantity of work accomplished.

ORGANIZATION AND EQUIPMENT.

The command of the *Endeavor* was turned over to the hydrographic inspector July 9, 1906, and from that date to the commencement of active field work the Survey representative was engaged on organization of party, collection of surveying data, general supervision of the construction of the house boat, and preparation of field equipment.

Some delay was experienced in completing repairs to the Survey steam launch *Inspector*, and by the difficulties of obtaining surveying assistants who were qualified to receive an appointment under civil-service rules. In fact, the last field assistant did not take his oath of office until the middle of October.

The field organization of the party, when fully completed, remained the same during the season, and was as follows:

- C. C. Yates, assistant, Coast and Geodetic Survey, and chief of party.
- E. A. Borst, triangulator.
- N. L. Arbuckle, topographic draftsman.
- F. W. Seth, surveyman and computer.
- One launch coxswain.
- One launch engineer.
- Five seamen and hands.

Later two additional draftsmen, J. D. Torrey and G. C. Moore, were appointed and assigned to duty in the office in Washington, where they were employed on the preparation for publication of the charts of natural oyster bars, making in all a party of six officers from the Coast and Geodetic Survey engaged on the work. During the last weeks of the field work, Mr. Paul C. Whitney, assistant, Coast and Geodetic Survey, was assigned to temporary duty in the party in place of Mr. E. A. Borst, who resigned.

The equipment of the party, in addition to the quarters and accommodations on the house boat *Oyster*, consisted of the large Coast and Geodetic Survey steam launch *Inspector*, an excellent whaleboat, a large ship's cutter, and a fishing dory. The Survey also furnished a complete outfit of theodolites, levels, sextants, and other instruments necessary for the work of the Government and State surveying parties, and the usual outfit of tools, sails and oars, stationery, etc.

FIELD WORK.

The launch *Inspector* and outfit were moved to Annapolis on August 10, 1906, on which date the actual field work of the Coast and Geodetic Survey party commenced.

Previous to this time a number of signals had been erected over old Coast and Geodetic Survey triangulation stations on the Severn River by the hydrographic engineer of the Commission. By using the triangulation so established, considerable oyster bar location was accomplished.

After the arrival of the Coast Survey party, the erection of signals and the observations of horizontal angles necessary to establish a framework of triangulation were kept well ahead of the oyster bar locations and other oyster investigations.

The methods of triangulation were those established by the Coast and Geodetic Survey and require no explanation other than that given by the publications of the Survey.

In all there are 123 triangulation stations involved in the survey of Anne Arundel County natural oyster bars. These stations are scattered along the western shore line of the bay from Fort Carroll to Holland Point, and are located at intervals frequently less than a half and rarely more than a mile apart. The triangulation was carried on with energy and good judgment, but the scattered condition of the work, composed of a mixture of new and old stations, increased the number of observations without the usual proportionate increase in number of new stations established.

After the appointment of a topographic draftsman on September 19, all boat sheets for both the hydrographic and oyster investigation parties were prepared and much other drafting work was done to facilitate the operations of the commissioners. Besides this work, the draftsman checked the computations and kept up the smooth projections as far as the new field work permitted.

Considerable difficulty was experienced in bringing up the computations to the immediate requirements of the work, especially in West River and to the south along the shore of the bay, where practically all old triangulation stations had been washed away. This situation was much relieved by the appointment of a surveyman on October 15, who had received some training in the computing division of the Survey at Washington.

The operations in the vicinity of Severn and South rivers were completed September 13, when the house boat *Oyster* was moved to West River. Up to this time the party had lived on shore and suffered many of the resulting inconveniences and delays due to scattered lodgings, uncertain meal hours, etc. The advantages of the house boat were immediately shown in the results, and in spite of much bad weather the work in the vicinity of West River was completed and the *Oyster* moved to Magothy River on November 9. Here the house boat remained until the end of the month, when she was moved to Bodkin Creek. On December 9 the main body of the field work for the season was completed and the *Oyster* went to Annapolis for the winter. Quarters were taken up on shore, the parties reduced in number, and offices established in the state house.

During the following winter the unfinished ends of triangulation, construction and planting of permanent monuments, and new descriptions of stations, occupied about a third of the time of the triangulator.

Besides the training and assistance required by an entirely new organization, and the systematizing of a new class of work, the representative of the Coast and Geodetic Survey devoted much time and took much interest in the work of the Commission in general as affecting both the surveying and other operations of the oyster-culture laws of Maryland.

OFFICE WORK.

After October 15, a greater part of the original computations were made by the surveyman of the party and were checked by the triangulator and the topographic draftsman. This work included the computations of 166 triangles, 67 geodetic positions, and 1,083 back computations of geodetic positions required for the technical descriptions of the boundaries of natural oyster bars. These computations, together with the making out of the abstract of horizontal angles, the lists of geographic positions, the lists of directions, and the reduction to center for 8 eccentric stations, make up a creditable amount of computation for the short season's work.

The drafting consisted of the preparation of nearly all boat sheets used by the hydrographic and oyster-investigation parties, the construction of 9 projection sheets, and the plotting of 2,596 sextant positions on the projections. Besides this drafting, the progress map was prepared for the lithographer, the boundaries of 91 natural oyster bars were plotted on the projections, the geographic positions of 361 corners of bars were scaled off the sheets, and 1,083 distances to landmarks from corners of bars taken off the projections for use in checking computations. This work was done neatly and accurately, and represents a larger amount of labor than this statement would indicate.

The great amount of necessary work required to prepare for publication the 4 large scale charts of the natural oyster bars and the report containing the description of boundaries and landmarks to accompany charts, can be seen from an inspection of the charts and reports.

SUMMARY.

The results obtained from the work of the Coast and Geodetic Survey in cooperation with the Maryland Shell Fish Commission need no other summary than is indicated by the published charts of the natural oyster bars and the scheme of

projections and triangulation shown on the progress map at the end of this report.

The work completed will stand the test of time, and it will be recognized ultimately that both time and money have been saved by having the work done systematically and accurately.

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last sixty-five years.

Before ending this report the representative of the Coast and Geodetic Survey deems it both desirable and natural to make a statement of appreciation of the ever courteous actions of everyone connected with the Maryland Shell Fish Commission^a and of his colleague^b from the Department of Commerce and Labor. This excellent relationship made true cooperation possible and aided greatly in the successful accomplishment of much work.

^a Walter J. Mitchell, chairman, Dr. Caswell Grave, secretary, Benjamin K. Green, treasurer, commissioners; Thomas H. Robinson, counsel; Swepson Earle, hydrographic engineer; W. Gibson Emory, assistant engineer; Joseph E. Smith, local oyster commissioner for Anne Arundel County; H. Courtney Jenifer, chief clerk; Samuel A. Harper, clerk; Ernest Reppenhagen, draftsman.

^b Dr. H. F. Moore, scientific assistant in the U. S. Bureau of Fisheries.

COAST AND GEODETIC SURVEY
PROGRESS MAP
 ANNE ARUNDEL COUNTY
 MARYLAND

To accompany report of work of United States
 Coast and Geodetic Survey in cooperation
 with the Maryland Shell Fish Commission
 1906-07

• Landmarks (Coast Survey Triangulation Stations)
 --- Water contours to county
 --- Limits of projections on file at Washington
 --- Limits of charts published by Coast and Geodetic Survey

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