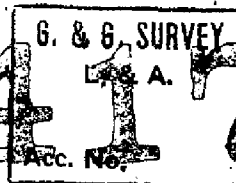


4174 to 4177



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4174 to 4177

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
State: <u>New Jersey</u>
11-5613
DESCRIPTIVE REPORT.
Topographic Sheet Nos. <u>4174, 4175</u> <u>4176, 4177</u>
LOCALITY:
<u>Camden</u> <u>Eastern Shore of the Delaware River</u>
From
<u>Woodbury Creek to Fisher Pt.</u> <u>Fishers Point to Woodbury Creek</u>
1925
CHIEF OF PARTY:
<u>L. D. Graham</u>

DESCRIPTIVE REPORT

TO ACCOMPANY

TOPOGRAPHIC SHEETS

Nos. A, B, C, D.

Eastern Shore of the Delaware River
From
Fishers Point to Woodbury Creek.

Date of Instructions September 24, 1925.

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General Description and Limits.

The area covered by these four topographic sheets extends along the eastern or New Jersey shore of the Delaware River from Woodbury Creek at the southern extremity to Fisher Point at the northern end, and includes parts of the city of Camden, the towns of National Park, Westville, Brooklawn, Gloucester and Delair and Petty Island. A small amount of topography was done on the Philadelphia side of the river at two points, one to locate the approach of the new suspension bridge across the Delaware River just below Cooper Point, and the second to verify a small area along the shore between League Island and Hollander Creek. The four sheets cover an area of approximately eight square miles.

A large portion of the shore depicted on these sheets is occupied by manufacturing plants, having their own docks, and usually each plant is surrounded by a high fence to keep out trespassers. This latter feature greatly added to the difficulty of the work as it made traversing along the water front impossible over a large section of the work. Practically the whole territory covered, except the southernmost sheet is built up and requires considerable detail to depict all salient features. The water front is not as much developed as the Philadelphia side opposite, but Camden is growing rapidly and the section along the river front is undergoing constant changes and improvements. Several low and marshy area are being or have recently been filled in, and will, in the near future be the sites of new factories.

Control

A scheme of third order triangulation was carried along the river throughout the entire length of the work. (See Seasons Report for details of triangulation). Some question had been raised as to the necessity of new triangulation for the control of the topographic survey; but conditions in the field showed it to be very essential. Few old stations were recovered. In fact there were none in the area covered by the two northern sheets, and some of those that were recovered could not have been definitely identified except by means of new triangulation.

This work was intended to be used as a basic survey, by means of which information from other sources showing improvements, changes, etc. could be readily co-ordinated with our charts. For this reason alone, greater accuracy was needed than in an ordinary planetable survey. The scale used, 1:5000, also was found to require more control per square mile than a smaller one, for on this scale the unsymmetrical distortion of the topographic sheet due to the rapidly changing hygrometric conditions of the atmosphere encountered especially at this season of the year, (late fall and early winter), was found to be very troublesome and productive of large errors.

One case was noted, on the first sheet used, where a position located by a three point fix from triangulation stations was six meters in error due to the fact that the sheet had held its scale in width, but had shrunk in length. The three plotted points were in a line across the width of the sheet and, therefore, the correct distance apart, but the point located by means of them was in the direction of the greatest distortion from them and as a result, plotted too far away by the distance mentioned. The largest distortion noted was 12 meters in one minute of latitude. It might be noted here that the sheets were well seasoned ones obtained from the drafting room. It was also found impossible to get good intersecting cuts on objects as much as a mile or more away on account of this distortion. For the above reasons, therefore, it was deemed advisable to have accurate triangulation control over the entire area covered, so that all docks, U. S. Engineers Stations, and other points that might be readily identified in the future, would be correctly shown within the limits of the scale used.

There are 92 triangulation points in the territory covered by the four topographic sheets. This obviates the need of long traverses, which were practically impossible on account of fences, buildings and other obstacles along the shore, and also does away with the use of distant objects for the control of the fixed position points, which were shown to be frequently much in error due to the unequal expansion or contraction of the sheet. This latter condition was very evident when the table was set up at a triangulation station. It was seldom that cuts to all visible triangulation stations would pass through the plotted positions on the sheet.

Weather.

In addition to the difficulties already mentioned, such as troublesome distortion due to large scale and atmospheric conditions, fences and other obstacles preventing traversing, etc., the weather might be included as probably the greatest offender of all. A strong, cold wind blew almost continuously, making observations uncertain on account of the vibrations of the sheet and table in the wind. The temperatures were well below freezing most of the time and dropped as low as 7° F. It was found that a heavy overcoat and gloves were a great handicap to the topographer. It was quite a common occurrence to have an overcoat button run afoul of the table clamps with disastrous effect to the orientation.

Detailed Descriptions.

Detailed descriptions of each topographic sheet follows. The sheets were numbered alphabetically in the field and so designated in the report. Sheet "A" is the southern sheet and sheet "D" the northern one.

SHEET "A"

Control

Sufficient control was furnished by 26 well distributed triangulation stations. This includes three pairs of range lights, Horseshoe Ranges, East and West Groups and Eagle Point Range, the location of which was called for in the instructions.

Changes noted.

A few changes were noted when comparing the sheet with the chart. The town of National Park and the Street Car Line connecting it with Camden have not been shown before. The streets shown are fairly well built up. The row of small houses along the beach at this point are all small summer cottages. In mapping, the end houses only were carefully located. The others are shown to indicate a continuous row.

Quite a large area of low and partially marshy land between Woodbury Creek and Hessian Avenue, National Park and adjacent to the Delaware River is being filled in at the present time by means of a large suction dredge. The small area shown on the north side of the sheet near Hollander Creek shows little change, but it is gradually being filled in from the inner side by carloads of earth from excavations in the city. A portion of Howell Cove west of the East Group; Horseshoe Ranges, appears to have been recently filled in.

Methods.

Three point fixes were used almost entirely over the whole sheet. A combination of traverse and resection was used to locate Woodbury Creek. No boats were used in this work, which made it a little inconvenient at times to rod in creeks and marshes; but at this point the marsh was frozen over so that the rodmen could walk on it to any desired point. A half mile traverse was run through National Park to locate the streets. The buildings at the Philadelphia Sanitarium are the same as previously shown, and no effort was made to relocate them on account of the heavy growth of trees in this vicinity.

Statistics for Sheet "A"

Detailed Shoreline	5.8 statute miles.
Roads, Railroads and streets	8.9 " "
Creeks	1.8 " "
Triangulation stations	26
Area	1.7 square stat. miles.

SHEET "B"Control.

Adequate control was supplied by 28 well distributed triangulation stations.

Changes noted.

In comparing the sheet with Chart No. 380 the following changes were noted. The towns of Westville and Brooklawn are shown for the first time as far back as the main highways, Broadway and Cwoen Point Road. The low area between Gloucester and Little Timber Creek on the North and South and between Broadway and the Electric Street Railway on the East and West, is being filled in at the present time by means of a suction dredge. The docks in front of this area show large changes. The two long docks were built during the war and used as ship building ways, the ships being launched sideways.

The docks in the immediate vicinity of Gloucester Point are but little used, and are rapidly falling to pieces. The ferry slip is no longer used, the ferry line to Philadelphia having been discontinued. (Change Coast Pilot, Atlantic Coast, Section C; page 71, line, 12). A new dock has been built at the Immigration Station at the foot of Cumberland St., Gloucester.

Large changes have occurred at the mouth of Newton Creek. The New York Shipbuilding Corporation has straightened and dredged out the Creek as far as the first bridge, filled in the marshy land, and built a large addition to their plant on the south side of the Creek.

Methods.

The shoreline was rodged in from three point fixes using triangulation points, practically throughout. Great care being taken to locate the dock line accurately. The work was carefully compared with U. S. Engineers Blueprints Nos. 7310 and 7311 from day to day as the work progressed, and any differences discovered were at once verified in the field. Short traverses were run up the creeks as far as Broadway, and Broadway was traversed, tying in frequently with points on the shore, to locate street intersections.

No special effort was made to locate all railroad tracks and switches. The main lines are shown, and such spurs

as could be located without loss of time while running in the shoreline. The general outline of the Reading Rail Road Yard, shown at the north end of the sheet, is correct, but no effort was made to accurately map the intermediate tracks and switches.

List of U. S. Engineer Stations determined by Planetable.

Name	Latitude	Longitude	Remarks
York	39° 55' 01.0 m	75° 07' 851.0 m	U.S.E. bronze disc.
Flag Pole	39° 53' 1255.0 m	75° 07' 884.5 m	Immigration Bldg.
Pusey	39° 53' 816.5 m	75° 08' 15.0	Chisel Mark.

Statistics for Sheet "B"

Detailed Shoreline	7.8 statute miles.
Roads, Railroads, and Streets	23.4 " "
Creeks	3.0 " "
Triangulation Stations	28
Signals located	5
Area	2.1 square stat. miles.

SHEET "C"

Control.

The area covered by this sheet contains 32 triangulation stations, which give excellent control over the entire region.

Changes noted.

Considerable change in the shoreline south of Kaighn Point is shown when compared with Chart No. 380. The pier at the foot of Jackson Street has entirely disappeared, and the cove is gradually being filled in. The old ferry slip at the foot of Kaighn Avenue has been converted into a market, and the new Reading R. R. Ferry Slips just below are in operation.

The approaches to the new suspension bridge across the Delaware just below Cooper Point are shown. The bridge has a clearance of 135 feet above high water. (Change Coast Pilot, Atlantic Coast, Section C, page 72, May 27, 1925 Supplement. Construction plant under bridge removed. Bridge to be opened July 1926.)

Some fill has been made near the mouth of Cooper River and a slipway is being dredged through it at the foot of Eighth Street. The large building on Cooper River between Eleventh and Twelfth Streets has been destroyed by fire.

Methods.

The shoreline throughout almost its entire length, was rodged in from three point fixes controlled by triangulation. Cooper River was run in by traverse above the State Street bridge, and had no good check at the upper end. The ends of the streets were located at the same time that the shoreline was cut in. A traverse was run to locate the ends of the new suspension bridge, and many street intersections were located at the same time. Short traverses were run down Delaware Avenue, Second Street and Ferry Avenue to locate streets which could not be cut in from the water front.

A test of the accuracy of the work was made when four points, namely, Croft Chimney, Cork Chimney, M. & F. Chimney, and New York Tank, which had been located by planetable were afterward determined by triangulation. Three of these points plotted exactly on the Planetable positions, and the fourth was three meters in error.

The work was carefully compared with U. S. Engineers Blueprint No. 7311 in the field and any variations from it were checked at the time.

The general outline of the Rail Road Yards are shown correctly, but no attempt was made to show details of the interiors of these yards. The ends of spurs running on to the wharves are shown, but no special effort was made to rod in switches or show them for any distance back from the water front.

List of U. S. Engineer Stations determined by planetable.

Name	Latitude	Longitude	Remarks
Ferry Flag Pole	39° 57' 612 m	75° 07' 1085 m	Vine St. Ferry.
Campbell	39 57 72 m	75 07 1292 m	USE bronze disc.
Coke Tank	39 55 1737 m	75 07 1355 m	On top of Bldg.

Statistics for Sheet "C"

Detailed Shoreline	12.2 statute miles.
Roads, Railroads and streets	38.8 " "
Creeks	0.8
Triangulation Stations	32
Signals located	6
Area	2.2 square stat. miles

SHEET "D"

Control

All needed control was furnished by 17 triangulation stations well distributed over the area.

Changes noted.

The dock line at Pavonia and Cramer Hill is now quite different than shown on Chart No. 380. For the most part these wharves are of very little importance and have but little water alongside. There are many old scows and barges along this part of the shore. They lie partially submerged in the shallow water, bare in some places at low tide. An attempt was made to roughly sketch in the areas containing these old hulks. Some of them are shown in detail on U. S. Engineers Blueprint No. 7312 which was compared with the work at it progressed.

Petty Island is shown much more in detail than before. The Greve-Levick Company, who own the eastern half of the Island have a large storage capacity for bunker oil, and in addition to the tanks shown, more are now under construction.

Methods.

As on the other sheets the work was practically all controlled directly from triangulation stations by three point fixes. Traverses ^{were} short and partially controlled from triangulation stations. Street intersections were usually located from the same positions that were used in cutting in the shore line. Cooper River and the West end of Petty Island were found to be six meters to the westward of their true positions at first. This portion of the work was located by three point fixes using signals "High Stand Pipe", "Crew Levick Tank", and "P. & L. Tank". It was found, upon investigation to be due to the shrinkage of the sheet in length, while the correct scale was maintained in width. This was the first sheet taken out into the field; and similar errors were guarded against on the other sheets.

The few railroad tracks in this area were all located accurately.

List of U. S. Engineer Stations determined by planetable.

Name	Latitude	Longitude	Remarks.
Brickyard Ch'y	39° 58'	830.5 m 75° 04'	05.0 m Hatch's Yard.
Old Camden W.W.Chy	39 57	833.5 m 75 06	204.0 m

Statistics for Sheet "D"

Detailed Shoreline	11.4 statute miles.
Roads, Railroads and streets	19.6 " "
Creeks	0.2 " "
Triangulation Stations	17
Signals located	6
Area	2.0

Landmarks.

All chimneys, stand pipes and water tanks located are prominent and may be seen from the river, but in such a built up area there are so many that it is difficult to identify any particular one. There are so many aids to navigation, and most of the docks are prominently numbered so that other land marks are not essential.

L. D. Graham

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4174

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. D

REGISTER NO. **4174**

State New Jersey

General locality Camden, Delaware River
~~Delaware River~~

Locality North Camden and Petty Island East Camden to Fisher Pt.
~~North Camden and Petty Island~~

Scale 1:5000 Date of survey October, 1925

~~vessel~~ Truck No. 39

Chief of Party L. D. Graham

Surveyed by L. D. Graham

Inked by _____

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated September 24, 1925

Remarks: Sheets to be inked at the Washington Office.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.
4175

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. C

REGISTER NO. **4175**

State New Jersey

General locality Camden ^{Delaware River} ~~Delaware River~~

Locality Camden Kaighn Pt. to E. Camden

Scale 1:5000 Date of survey November, 192 5

Vessel Truck No 39

Chief of Party L. D. Graham

Surveyed by L. D. Graham

Inked by _____

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated September 24, 192 5

Remarks: Sheet to be inked at Washington Office.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4176

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. B

REGISTER NO. **4176**

State New Jersey

General locality Camden, Delaware River
~~Delaware River~~

Locality Camden & Gloucester Westville to Kaighn Pt.

Scale 1:5000 Date of survey Nov. & Dec., 1925

~~Vassak~~ Truck No. 39

Chief of Party L. D. Graham

Surveyed by L. D. Graham

Inked by _____

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated September 24, 1925, 192

Remarks: Sheet to be inked at Washington Office.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

4177

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. A

REGISTER NO. **4177**

State New Jersey

General locality Camden, ^{Delaware River} water front, ~~Delaware River~~

Locality Woodbury Creek to Westville
~~Washington Park to National Park~~

Scale 1:5000 Date of survey December, 1925

~~Traverse~~ Truck No. 39

Chief of Party L. D. Graham

Surveyed by L. D. Graham

Inked by _____

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated September 24, 1925

Remarks: Sheet to be inked at the Washington Office.