

6395

~~Small Central~~

U. S. COAST & GEODETIC SURVEY  
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Form 504  
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DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
R. S. PATTON, DIRECTOR

## DESCRIPTIVE REPORT

Topographic }  
~~Hydrographic~~ } Sheet No. A

State Pennsylvania & New Jersey

### LOCALITY

Delaware River

Vicinity of Tacony, Delair, and

Palmyra

1935

CHIEF OF PARTY

E B ROBERTS

U. S. GOVERNMENT PRINTING OFFICE: 1934

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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 **T6395**

REGISTER NO.

State Pennsylvania and New Jersey<sup>24</sup>

General locality Delaware River<sup>13</sup>

Locality Tacony, Delair, and Palmyra<sup>24</sup>

Scale 1/10,000 Date of survey July, 1935

Vessel Party No. 8

Chief of party E. B. Roberts

Surveyed by W. K. Doolittle

Inked by W. K. Doolittle

Heights in feet above \_\_\_\_\_ to ground to tops of trees

Contour, Approximate contour, Form line interval \_\_\_\_\_ feet

Instructions dated 22 April, 1935

Remarks: Photo-Topo Control sheet



DESCRIPTIVE REPORT  
TO ACCOMPANY TOPOGRAPHIC SHEET A  
H T 202  
DELAWARE RIVER  
Vicinity of Tacony, Delair, and Palmyra.

E. B. Roberts, H & G Engr., Chief of Party.  
W. K. Doolittle, Surveyor, Topographer.

Instructions dated 22 April, 1935.

-o-

General description of the coast.

This sheet covers the Delaware River from the north part of Philadelphia through Tacony on the Pennsylvania side, and from Delair through Riverton on the New Jersey side.

On the Pennsylvania side, northeast to station Keystone, the high water line is determined by bulkheads, masonry revetments, and concrete retaining walls. At the Disston Saw Works the wall is composed of worn-out grindstones. Upstream from station Keystone, there is a natural shoreline, outside of which lies a narrow marshy strip. ✓

On the New Jersey side northeastward to Delair, the shore is defined by dikes and wood bulkheads. At Fisher Point there is a sand and gravel beach between the low and high water lines, joined at the east end by marshes covered by a plant locally known as 'can docks', broad leaved and tall enough to hide a man, interspersed with marsh grass. This marsh extends northeastward, 100 to 350 meters wide, almost to Riverton. It is confined by dikes about Palmyra. Pensauken Creek cuts across the marsh area. At Riverton there is a gravel beach with stone river walls at the high water line. ✓

No portion of either shore rises to high ground.

Bounding all the marsh areas is a five meter strip of sand and mud which bares outside the vegetation at time of low water. ✓

North of Pensauken Creek mouth are several spoil mounds and a large wreck, 50 to 250 meters outside the low water line.

Landmarks.

The most prominent object is the U. G. I. gas holder, a very large tank visible a long way up and down stream.

The Pennsylvania Railroad bridge at Delair and the Tacony-Palmyra toll bridge are important landmarks.

The Philadelphia Coke Co. taller stack is of red brick reinforced by steel bands at 10 foot intervals.

H. F. Disston & Sons Co. bell-top chimney is of black steel having a peculiar bulging top. ✓

Kieckhefer Container Co. stack is near a tank, very prominent, and the only stack in the vicinity.

The fixed aids to navigation are easily recognized.

The above objects, listed on form 567 ~~herewith~~, are recommended for charting. They are selected from a great wealth of objects as being those most easily identified. This is a busy manufacturing district, and tanks and stacks abound. It is recommended that brief descriptive legends be attached to these selected landmarks, and that other objects previously charted be

*chart letter 909/1935*

be



retained but undescribed except as tank, stack, etc.

#### Character of control used.

Immediate triangulation control, consisting of the following, was used throughout:

1. Adjusted intersection points of 1933 1st-order triangulation.
2. Adjusted stations of 1925 3rd-order triangulation. ✓
3. Main scheme and intersection points of 1935 2nd-order triangulation, unadjusted field computations on 1927 N. A. datum.

#### Closing errors of traverses and how adjusted.

The wealth of triangulation points permitted resection and graphical fixing almost throughout. With one exception, therefore, there were no traverses, no accumulations of errors, and no adjusting. ✓  
A traverse run between stations Keystone and Pump showed a closing error of 2 meters westward, the adjustment of which was perfunctory.

#### Auxiliary surveying methods.

The only departure from normal planetable methods was near latitude  $40^{\circ} 00'$  longitude  $75^{\circ} 06'$ , where a point was located by sextant fix for additional air-photo compilation control. This point is plotted on the sheet. Both the observation of the angles and plotting have been carefully checked. The fix follows: ✓

U. G. I. Tank  $49^{\circ} 50'$  All objects dated 1933.  
Phila. Coke Co. taller stack  
H. F. Disston & Sons  $34^{\circ} 31'$   
Co. squat black water tank.  
Check left angle to All Saints Ch. spire,  $17^{\circ} 34'$

The offshore spoil dumps were located at low water by occupation, ✓  
3-point fix location, and rodding of the low water lines.

Examination and measurement of detail near control points was separately made by a field inspection party, whose notes are submitted as such. Additional air-photo control points, some within and some without the area of the sheet, but all away from the vicinity of the planetable work, were determined by checked 3-point fixes. These, together with sketches, are separately submitted by the inspection party. ✓

#### Laying down of range lines.

All range lines were laid down as accurately as possible, the methods being as follows:

Fisher Point Range. No distant point on range could be reached. The planetable was set near the front light, accurately on range, and the line to the rear light, relatively long in this case, laid down. ✓

Delair Range. A Point on the extended range line at its intersection with the southeast bank was rodded in. ✓

Palmyra Range. A point observed to be on the extended range line at its northeasterly intersection with land was rodded in. This range line reaches over parts of this sheet and sheet B. A temporary projection was constructed and the full length of the line laid down thereon, and the portions of the line falling on sheets A and B then transferred to those sheets. ✓

The azimuths of these range lines were scaled and read as facing the range lights, and the azimuths closely checked by azimuth computation. ✓



using the triangulated positions of the lights.

Form lines.

No form lines were applied.

Changes in objects previously shown.

In general the shoreline has remained fairly constant. There have been construction alterations, notably the addition of length to the U. G. I. and Philadelphia Coke Co. piers, and the destruction of one pier at the Gerard Smelting Co.

Future changes.

Extensive changes in shore lines, areas of disposal banks, etc., are to be expected as a result of river improvement works now in progress or projected. Some are predictable on the basis of U. S. E. D. dredging and disposal plans; others are unpredictable. The only guide will be the surveys of the U. S. E. D.

Work incomplete or unreliable.

In view of the intended use of this as a photo-topo control sheet, the exact location of all fixed points has been preserved as dots surrounded by pencilled circles. Lines, except where precisely fixed, have been left dashed.

In a few places where the fixed points were near but not on the lines they determined, paced offset distances have been utilized, but no appreciable error results therefrom.

At a point 250 meters south of Palmyra Range front light there is uncertainty in the location of the high water line over a spoil dump, which is subject to change.

The declinoire was not checked at any time, an unfortunate result of the hurried termination of project H T 202.

Deviations from standard practice.

No deviations, except as explained above, were made.

Discrepancies in joining previous work.

No discrepancies exist.

List of new names.

No new names are involved.

List of planetable positions, and recoverable topographic stations.

With the exception of descriptions on form 52h of Delair Range front and rear lights, which were located by topographic means, no list of planetable positions nor reports of recoverable topographic stations are submitted because:

Triangulation locations were made for all fixed aids to navigation, all described U.S.E.D. and other survey monuments, and for all prominent objects not previously located by acceptable triangulation means.



There is a wealth of triangulation points in such profusion of numbers and distribution that the recording of additional points is quite unnecessary.

The few topographic points shown on the sheet would be an aid to future hydrographic parties, but are of doubtful permanence. These or others could be readily determined by future hydrographic parties without recourse to the theodolite or planetable. In any event, adequate hydrographic control stations exist in the triangulation data alone.

Photographs obtained.

No photographs other than the air photographs were made.

Changes in coast line.

Changes have been minor, except where disposal areas have been placed. The sheet and the air photographs are conclusive regarding such changes.

Character of marshes covered by high water.

See the general description of the shore. The marshes are all covered at high water, but the tallest marsh growth, comprising 90 percent of the growth, shows at normal high water.

General statement.

This being a photo-topo control sheet, certain of the details ordinarily pertaining to topographic sheets have not been covered herein or on the sheet. Such omissions, however, are balanced by the work performed by a field inspection party, whose records are separately rendered. *Filed Air Photo Unit under "Field Inspection Data."*

The area covered is a highly developed industrial and residential region. The work has accordingly been done with the idea of maintaining as high an order of accuracy as was possible. The shoreline was covered in more than usual attention to detail for such sheets. The low water line has been indicated as well as possible where it was possible to observe it; however a hydrographic development of this line would be of greater accuracy.

Respectfully Submitted,

*E. B. Roberts*  
for W. K. Doolittle,  
Surveyor.

Inspected and approved,

*E. B. Roberts*  
E. B. Roberts, H. & G. Engr.,  
Chief of Party.

*applied to chart 280  
Apr. 27, 1936  
S.H.S.*

*applied to chart 296  
Apr. 24, 1936  
S.H.S.*

## Remarks

## Decisions

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# GEOGRAPHIC NAMES

Survey No. T-6395

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	I RR. GUIDE
<u>Delaware River</u>	295								1
<u>Tacony</u>	295					✓			2
<u>Philadelphia</u>	295					✓		✓	3
<u>Delair</u>	295							✓	4
<u>Palmyra</u>	295					✓			5
<u>Riverton</u>	295							✓	6
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*O'Keefe 2/25/36*

# MEMORANDUM

## IMMEDIATE ATTENTION

SURVEY  
 DESCRIPTIVE REPORT } No. ~~H~~  
~~PHOTOSTAT OF~~ } No. T 6395

{ received Feb. 13, 1936  
 { registered Feb. 20, 1936  
 { verified  
 { reviewed  
 { approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
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✓ 25		<i>OK</i>	<i>Landmarks &amp; Range lines.</i>
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RETURN TO

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*OK to Green*

*G. K. Green Feb 20, 1936*

## REVIEW OF TOPOGRAPHIC SURVEY No. 6395 Field letter "A"

Title (Par. 56) *Tacony, Delain, and Palmyra, Delaware River, Pennsylvania and Chesapeake*Chief of Party *E. B. Roberts* Surveyed by *W. K. Doolittle* Inked by *W. K. Doolittle*Ship *Party No. 8* Instructions dated *Apr. 22, 1935* Surveyed in *July 1935*

1. The survey and preparation for it conform to the requirements of the Topographic Manual. (Par. 7, 8, 9, 13, 16.) ✓
2. The character and scope of the survey satisfy the instructions. ✓
3. The control and closures of traverses were adequate. (Par. 12, 29.) ✓
4. The amount of vertical control that the Manual specifies for -contours-formlines- was accomplished. (Par. 18, 19, 20, 21, 22, 23.)  
*No vertical control was accomplished.*
5. The delineation of -contours-formlines- is satisfactory. (Par. 49, 50.) *No contours or formlines are shown*
6. There is sufficient control on maps from other sources that were transmitted by the field party to enable their application to the charts. (Par. 28.) *Air photos and field inspection notes are filed in the Air Photo Unit under "Field Inspection Data".* ✓
7. High water line on marshy and mangrove coast is clear and adequate for chart compilation. (Par. 16a, 43, 44.) ✓
8. The representation of low water lines, reefs, coral reefs and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41.) ✓
9. Rocks and other important details shown on previous surveys and on the chart were verified. (Par. 25, 26, 27.) ✓
10. The span, draw and clearance of bridges are <sup>not</sup> shown. (Par. 16c.)
11. ~~Locations and elevations of summits are given. (Par. 19, 51.)~~
12. ~~The tree line was shown on mountains. (Par. 16g.)~~

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Use reverse side for extending remarks.



a comparison with prior surveys shows that the shoreline has remained fairly constant but there are some changes in details. More extensive changes may be expected in the future on account of river improvements now in progress, see Desc. Rep. page 3, par. 3.

The information (shoreline, wharves, &c.) on the present survey should supersede similar information on the prior surveys for charting purposes.

Prior surveys, portions of which fall within the limits of the present survey, are T-168 (1843-4), T-1993 (1890), T-1993a (1911), T-1934 (1888), T-1942 (1878-9), T-2099 (1890), T-2144 (1885) and T-4174 (1925).

Charts covering the area are 280, 295 and 296.



13. The descriptive report covers all details listed in the Manual, in so far as they apply to this survey. (Par. 64, 65, 66, 67.) ✓
14. The descriptive report also contains additional information required in ~~aero-topography~~ relative to type of photographs, method of compilation and type of ground control.
15. The descriptions of recoverable stations and references to shore line were accomplished on Form 524. (Par. 29, 30, 57, 67 except scaling of DMs and DPs, 68.) ✓
16. A list of landmarks for charts was furnished on Form 567 and plotting checked. (Par. 16d, e, 60.) *Chart letter 909/1935* ✓
17. The magnetic meridian was shown ~~and declination was checked.~~ (Par. 17, 52.) *but the declination was not checked.* ✓
18. The geographic datum of the sheet is *North American 1927* and the reference station is correctly noted. (Par. 34.) ✓
19. Junctions with contemporary surveys are adequate. ✓
20. Geographic names are shown on the sheet and are covered by the Descriptive report. (Par. 64, 66k.) ✓
21. The quality of the drafting is good. (Par. 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46, 47, 48, 49, 50.) ✓
22. No additional surveying is recommended. ✓

23. The Chief of Party inspected and approved the sheet and the descriptive report, ~~after review by~~

24. Remarks: *This survey was made as a Graphic Control Survey but no air photo compilation is contemplated at the present time. The field inspection notes, etc., are filed in the Air Photo Unit under "Field Inspection Data."*

Reviewed in office by *R. J. Christman, Jan. 12, 1937.*

Examined and approved:

*C. H. Green.*  
Chief, Section of Field Records

Chief, Section of Field Work

Chief, Division of Charts

Chief, Division of Hyd. and Top.