<table>
<thead>
<tr>
<th>Field No.</th>
<th>PH-7(46)C</th>
<th>Office No.</th>
<th>T-8775</th>
</tr>
</thead>
</table>

**LOCALITY**

- **State**: DELAWARE
- **General locality**: CHESAPEAKE & DELAWARE CANAL,
  DELAWARE RIVER
- **Locality**: LOREDON GROVE TO READY POINT (CANAL),
  PORT PENN TO CEDAR CREEK (RIVER)

**1948**

**CHIEF OF PARTY**

- E. L. Jones, Field Office
- T. B. Reed, Baltimore Photo Office

**LIBRARY & ARCHIVES**

- **DATE**: October 4, 1951
DATA RECORD
T- 8775

Quadrangle (II): Project No. (II): PH-7(46)C

Field Office: Camden, N. J. Chief of Party: E. L. Jones

Compilation Office: Chief of Party: Thos. B. Reed
Baltimore Photogrammetric Office

Instructions dated (II III): Copy filed in-Descriptive
25 March 1946, Supplemental Inst. No. 1 Report No. T-(VI)
dated 1 June 1946, and 19 July 1946. Photogrammetry
Completed survey received in office: 4-22-49
Office Files.

Reported to Nautical Chart Section: April 1949

Reviewed: 31 Aug. 1949 Applied to chart No. Date:

Redrafting Completed:

Registered: July 26 1951 Published:

Compilation Scale: 1:10,000 Published Scale:

Scale Factor (III): 1.000

Geographic Datum (III): N.A. 1927 Datum Plane (III): Mean High Water

Reference Station (III): DUFO, 1933

Lat.: 39° 34' 17.303" Long.: Adjusted
(533.6m) 75° 34' 55.734" (1330.3m) UNADJUSTED

State Plane Coordinates (VI):

\[ X = 1,741,917.47 \text{(N.J.)} \quad Y = 2,701,158.73 \text{(N.J.)} \]
\[ 453,348.66 \text{ (Del.)} \quad 572,374.70 \text{ (Del.)} \]

Military Grid Zone (VI)
PHOTOGRAPHS (III)

<table>
<thead>
<tr>
<th>Number</th>
<th>Date</th>
<th>Time</th>
<th>Scale</th>
<th>Stage of Tide</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964 to 1967</td>
<td>3-12-46</td>
<td>1210</td>
<td>1:10,000</td>
<td>1.4' above MLW</td>
</tr>
<tr>
<td>* 1976 to 1982</td>
<td></td>
<td>1232</td>
<td>*</td>
<td>*0.4' above MLW</td>
</tr>
<tr>
<td>1983</td>
<td></td>
<td>1232</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>* 1985 &amp; 1986</td>
<td></td>
<td>1235</td>
<td></td>
<td>*0.4</td>
</tr>
<tr>
<td>1987 &amp; 1988</td>
<td></td>
<td>1235</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>1997 to 2001</td>
<td></td>
<td>1255</td>
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<tr>
<td>2048</td>
<td></td>
<td>1347</td>
<td></td>
<td>0.4</td>
</tr>
</tbody>
</table>

Actual tide observations at Philadelphia corrected to Tide from (III): "Delaware City to Reedy Island". * Predicted Tide Tables, Atlantic Ocean, 1946. Reference Station, Reedy Point, Delaware, with correction Mean Range: 5.2 Spring Range: tions to Biddle Point, Del. * 4.8 Camera: (Kind or source) * 5.2 U.S.C. & G.S. single lens camera, wide angle, type "D". Focal length 12".

Field Inspection by: E. L. Jones
Date: June, July, August 1946.

Field Edit by: R.A. Horn (This was additional field check for T-8753(Top) and was applied to the shoreline survey.)
Date: Aug. 1946

Date of Mean High-Water Line Location (III): Same as date of photographs supplemented by field inspection during July and August 1946.

Projection and Grids ruled by (III) T.L. Janson
" " " " checked by: T.L. Janson
Date: Sept. 10, 1946

Control plotted by: Leroy A. Senesack
Date: Oct. 29, 1946

Control checked by: George O. Fellers
Date: Oct. 29, 1946

Radial Plot by: H.R. Rudolph
F.J. Tarcza
Date: 15 July 1947

Detailed by: Richard W. Gawlik
Date: 7 July 1947 to 26 Sept. 1947.

Reviewed in compilation office by: J.W. Vonasek
Date: 29 Sept. to 22 Oct. 1947

Elevations on manuscript checked by: J.W. Vonasek
Date: 16 Oct. 1947
STATISTICS (III)

Land Area (Sq. Statute Miles):  9

Shoreline (More than 200 meters to opposite shore):  9 statute miles

Shoreline (Less than 200 meters to opposite shore):  30 statute miles (measured along the center line of the stream)

Number of Recoverable Topographic Stations established:  23

Number of temporary Stations located by radial plot:  3

Leveling (to control contours) - miles:

Roman numerals indicate whether the item is to be entered by, (II) Field Party, (III) Compilation Party, or, (VI) the Washington Office.

When entering names of personnel on this record give the surname and initials (not initials only).

Remarks:
FIELD INSPECTION REPORT
Shoreline Sheets T 8775 & T 8776
Project Ph-7 (46)
Sub-project C
E. L. Jones, Chief of Party

All phases of field work were completed in accordance with the Director's Instructions, Project Ph-7 (46), dated 25 March, 1946, and Supplemental Instructions No. 1, dated 14 June, 1946, except for deviations herein noted.

About ½ the shoreline sheet T 8775 is located within the limits of Quadrangle T 8753; therefore, all phases of the work east of longitude 75° 37'31" are covered in the Field Inspection Report of T 8753 and not in the body of this report.

1. Description of the Area:

Land along the Chesapeake and Delaware Canal in the area of these sheets is undulating with elevations ranging from sea level to about 60 ft. above M.S.L. There is some marsh at both the eastern and western ends of the area.

The canal has been widened and deepened in recent years so that it accommodates sea-going vessels.

The canal passes through a prosperous agricultural section of Delaware and Maryland.

2. Completeness of Field Inspection:

Field inspection is believed to be adequate except for the following:

Position of Chesapeake and Delaware Canal Light No. 21 [not shown on manuscript.]

Possible changes in shoreline in area of two above lights

At the time of shoreline inspection, the south bank of the canal was being sloped and terraced. During construction, the above-mentioned lights were removed and are to be re-installed upon completion of the work. It is possible that a slight change will be made in the shoreline at these points.

Interior inspection was completed in an area extending for approximately 300 meters on each side of the canal.
3. **Interpretation of the Photographs:**

Single lens photographs, scale 1/10,000 were used for all phases of field work.

As photography was of the first part of March, 1946, no difficulty was encountered in interpretation of photographic details for field work.

4. **Horizontal Control:**

Fourteen horizontal control stations were searched for or recovered. Of these, 5 were identified on the photographs, either by the substitute station method or pricked direct.

One new 3rd Order triangulation station was established by J.E. Hundley, Photo Aid, during August, 1946. The station, marked, "BRIDGE 1946", was established by a three-point fix, with four directions.

5. **Vertical Control:**

Not applicable.

6. **Contours and Drainage:**

Not applicable.

7. **Mean High Water Line:**

The average tide range is about 5.5 ft.

8. **Low Water Line:**

Low water along the greater part of the length of the canal is synonymous with the mean high water line or apparent shoreline; in some areas, the low water line was found to be outside the mean high water line or apparent shoreline. In these areas, the approximate low water line was sketched in on photographs.

9. **Wharves and Shoreline Structures:**

No comment necessary.
<table>
<thead>
<tr>
<th>Light List No.</th>
<th>Name</th>
<th>Chart No.</th>
<th>Lat.</th>
<th>Long.</th>
<th>Checked in Field</th>
<th>Discrepancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1674.5</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>294 &amp; 570</td>
<td>39° 31.1'</td>
<td>75° 37.7'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; structure is black pole, not white pole as listed.</td>
</tr>
<tr>
<td>1675</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>294 &amp; 570</td>
<td>39° 33.6'</td>
<td>75° 38.1'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; located on N bank, structure is a white tank house, not white skeleton tower and tank house as listed.</td>
</tr>
<tr>
<td>1676</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>294 &amp; 570</td>
<td>39° 33.3'</td>
<td>75° 38.2'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; structure is a white tank house, not white skeleton tower and tank house as listed.</td>
</tr>
<tr>
<td>1676.5</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>294 &amp; 570</td>
<td>39° 33.3'</td>
<td>75° 38.8'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; structure is a white tank house, not white skeleton tower and tank house on pier as listed.</td>
</tr>
<tr>
<td>1677</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>294 &amp; 570</td>
<td>39° 33.1'</td>
<td>75° 39.3'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; structure is a white tank house, not white tank house on pier as listed.</td>
</tr>
<tr>
<td>1680</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>294 &amp; 570</td>
<td>39° 32.8'</td>
<td>75° 39.9'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; structure is a white tank house, not white skeleton tower and tank house on pier as listed.</td>
</tr>
<tr>
<td>1681</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>570</td>
<td>39° 32.7'</td>
<td>75° 40.5'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; located on north bank, structure is a white tank house, not a white skeleton tower and tank house on pier as listed.</td>
</tr>
<tr>
<td>1685</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>570</td>
<td>39° 32.7'</td>
<td>75° 41.8'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; structure is a white tank house, not white skeleton tower and tank house as listed.</td>
</tr>
<tr>
<td>1689</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>570</td>
<td>39° 32.7'</td>
<td>75° 42.5'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; structure is a white tank house, not white skeleton tower and tank house as listed.</td>
</tr>
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<td>1701</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>570</td>
<td>39° 32.2'</td>
<td>75° 47.0'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; located on north bank opposite Bethel, structure is a white tank house, not white tank house on pier as listed.</td>
</tr>
<tr>
<td>1703</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>570</td>
<td>39° 31.9'</td>
<td>75° 47.4'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; located on S bank, structure is white tank house, not white tank house on pier as listed.</td>
</tr>
<tr>
<td>1705</td>
<td>CHESAPEAKE &amp; DELAWARE</td>
<td>570</td>
<td>39° 31.8'</td>
<td>75° 48.4'</td>
<td>I.Y.F. 7/31/46</td>
<td>In existence, charted correctly; structure is a white pole on west end of dock as listed.</td>
</tr>
</tbody>
</table>
10. Details Offshore from Mean High Water Line:

Details found offshore from mean high water line consisted of some aids to navigation, dolphins, and piles, all of which were delineated on the photographs.

11. Landmarks and Aids to Navigation:

All necessary data on landmarks and aids to navigation is listed on accompanying Form No. 567.

12. Hydrographic Control:

Each of 34 fixed aids to navigation were identified on the photographs and described on Form No. 524. No other hydrographic control was established. (See "Notes & Comments" heading.)

13. Landing Fields and Aeronautical Aids:

None.

14. Roads:

No comment.

15. Bridges:

A field investigation of the published bridge data was made during July, 1946, by I.Y. Fitzgerald, Engineering Aide. Horizontal and vertical clearances were measured in the field with a steel tape.

All published data in the 1941 List of Bridges over Navigable Waters was found to be correct except for the following discrepancies:

- The Summit, Delaware, vertical lift highway bridge, (page 78, 1941 List of Bridges), has a vertical clearance above estimated MHW, span closed, of 70.90 feet, (not listed), span open, 138.9 ft. (not listed).

- The Canal, Delaware, vertical lift, Pennsylvania R.R. bridge, (page 78, 1941 List of Bridges), has a vertical clearance, above estimated MHW, span closed, of 48.20 ft., (not listed), span open, 137.7 ft., (not listed).

- The St. Georges, Del., fixed highway bridge, (page 78, 1941 List of Bridges) has a vertical clearance above estimated MHW of 135.50 ft., (not listed).
The Chesapeake City Md., vertical lift bridge (page 78, 1941 List of Bridges), was destroyed in July, 1942.

Above clearances were measured from an estimated high water line on bridge fenders or piles, to the lowest point of the superstructure.

16. **Buildings:**

   No comment necessary.

17. **Boundaries:**

   No comment necessary.

18. **Geographic Names:**

   Geographic names were investigated in the field by I. Y. Fitzgerald, Engineering Aid, and Lowell I. Bass, Engineering Aid, and are to be the subject of a special project report compiled by Lowell I. Bass.

19. **Coast Pilot Information:**

   Coast pilot information was investigated during the course of field work; and a special project report compiled by George E. Varnadore, Photogrammetrist. *Filed in Coast Pilot Sect., Div. of Charts.*

   **Submitted:**
   22 August 1946
   Isaiah Y. Fitzgerald
   Engineering Aid

   **Field Review:**
   3 September 1946
   James E. Hundley
   Photo. Aid

   **Approved:**
   10 September 1946
   Edmund E. Jones
   Chief of Party
FIELD REPORT

SHORELINE MANUSCRIPT, SURVEY NO. T-8775

The field inspection report for the western half of this survey is part of a combined report for shoreline surveys Nos. T-8775 and T-8776, which is attached to this report. The eastern half of this survey is in the area covered by topographic survey No. T-8753. For field data, refer to the field report of Survey No. T-8753.
<table>
<thead>
<tr>
<th>STATION</th>
<th>SOURCE OF INFORMATION (INDEX)</th>
<th>DATUM</th>
<th>LATITUDE OR $\nu$-COORDINATE</th>
<th>DISTANCE FROM GRID IN FEET OR PROJECTION LINE IN METERS</th>
<th>DATUM CORRECTION</th>
<th>N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELAWARE CITY, SILVER STANDPIPE 1933</td>
<td>G-1751 Pg. 126</td>
<td>N.A. 1927</td>
<td>39° 34' 27.569&quot;</td>
<td>850.2 (1000.2)</td>
<td></td>
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<td></td>
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<td></td>
<td>75° 35' 39.805&quot;</td>
<td>950.1 (1422.0)</td>
<td></td>
<td></td>
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<tr>
<td>DUPONT, 1933</td>
<td>G-1664 Pg. 73</td>
<td>N.A. 1927</td>
<td>39° 34' 17.303&quot;</td>
<td>533.6 (1316.8)</td>
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<td>75° 34' 55.734&quot;</td>
<td>1330.3 (101.8)</td>
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<tr>
<td>SUB. STA. DUPONT</td>
<td>G-1751 Pg. 127</td>
<td>N.A. 1927</td>
<td>39° 34'</td>
<td>534.7 (1315.7)</td>
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<td></td>
<td>75° 34'</td>
<td>1341.1 (91.0)</td>
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<tr>
<td>FORT DUPONT BLACK WATER TANK, 1933</td>
<td>G-1751 Pg. 127</td>
<td>N.A. 1927</td>
<td>39° 34' 02.700&quot;</td>
<td>83.3 (1767.1)</td>
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<td></td>
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<td></td>
<td>75° 35' 08.260&quot;</td>
<td>197.2 (1235.0)</td>
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<tr>
<td>REEDY POINT C&amp;D CANAL SOUTH BREAK-WATER FLASHING WHITE LIGHT</td>
<td>G-1751 Pg. 127</td>
<td>N.A. 1927</td>
<td>39° 33' 36.465&quot;</td>
<td>1124.6 (725.8)</td>
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<td></td>
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<td>75° 33' 42.946&quot;</td>
<td>1025.2 (407.2)</td>
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<tr>
<td>DELAWARE CITY, C&amp;D CANAL LIFT BRIDGE NORTH PIER 1933</td>
<td>G-1751 Pg. 127</td>
<td>N.A. 1927</td>
<td>39° 33' 29.757&quot;</td>
<td>917.7 (932.7)</td>
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<td></td>
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<td>75° 35' 00.448&quot;</td>
<td>10.7 (1421.7)</td>
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<td>DELAWARE CITY, C&amp;D CANAL LIFT BRIDGE SOUTH PIER, 1933</td>
<td>G-1751 Pg. 128</td>
<td>N.A. 1927</td>
<td>39° 33' 27.703&quot;</td>
<td>854.4 (996.0)</td>
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<td></td>
<td></td>
<td>75° 34' 59.788&quot;</td>
<td>1427.3 (5.1)</td>
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<tr>
<td>BRIDGE, 1946</td>
<td>Field Computations</td>
<td>N.A. 1927</td>
<td>39° 33' 06.996&quot;</td>
<td>215.8 (1636.6)</td>
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<td>75° 39' 03.068&quot;</td>
<td>72.8 (1359.8)</td>
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<tr>
<td>BAKER REAR RANGE LT., 1933</td>
<td>G-1751 Pg. 127</td>
<td>N.A. 1927</td>
<td>39° 32' 26.687&quot;</td>
<td>823.0 (1027.4)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>75° 34' 12.770&quot;</td>
<td>304.9 (1127.9)</td>
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<td></td>
</tr>
<tr>
<td>PORT PENN, 1933</td>
<td>G-1664 Pg. 74</td>
<td>N.A. 1927</td>
<td>39° 32' 01.927&quot;</td>
<td>594.4 (1793.9)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>75° 34' 44.544&quot;</td>
<td>1063.8 (369.1)</td>
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<td></td>
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1 FT. = 0.3048008 METER

COMPUTED BY: L.A. Senasack

DATE: 10/29/46

CHECKED BY: G.O. Fellers

DATE: 10/29/46
<table>
<thead>
<tr>
<th>STATION</th>
<th>SOURCE OF INFORMATION (INDEX)</th>
<th>DATUM</th>
<th>LATITUDE OR y-COORDINATE LONGITUDE OR x-COORDINATE</th>
<th>DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS FORWARD (BACK)</th>
<th>DATUM CORRECTION</th>
<th>N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD (BACK)</th>
<th>FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD (BACK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUB. STA. PORT PENN</td>
<td></td>
<td>N.A. 1927</td>
<td>39° 32'</td>
<td>75° 34'</td>
<td></td>
<td>10.7 (1839.7)</td>
<td>1068.7 (364.2)</td>
</tr>
<tr>
<td>CARROW, 1933</td>
<td>G-1664 Pg. 58</td>
<td>n</td>
<td>39° 31'</td>
<td>75° 37'</td>
<td></td>
<td>1054.3 (796.1)</td>
<td>1268.8 (164.3)</td>
</tr>
<tr>
<td>SUB. STA. CARROW</td>
<td></td>
<td>n</td>
<td>39° 31'</td>
<td>75° 37'</td>
<td></td>
<td>968.8 (881.6)</td>
<td>1292.6 (140.5)</td>
</tr>
<tr>
<td>PEA PATCH ISLAND LT. 1933</td>
<td>G-1751 Pg. 125</td>
<td>n</td>
<td>39° 35'</td>
<td>75° 33'</td>
<td></td>
<td>786.4 (1064.0)</td>
<td>1310.5 (121.3)</td>
</tr>
<tr>
<td>FORT DELAWARE (U.S.E.) 1937</td>
<td>U.S.E.D. Phila. Dist.</td>
<td>n</td>
<td>39° 35'</td>
<td>75° 34'</td>
<td></td>
<td>644.2 (1205.6)</td>
<td>81.0 (1350.8)</td>
</tr>
<tr>
<td>SUB. STA. FORT DELAWARE (U.S.E.)</td>
<td></td>
<td>n</td>
<td>39° 35'</td>
<td>75° 34'</td>
<td></td>
<td>622.1 (1228.3)</td>
<td>62.0 (1369.8)</td>
</tr>
<tr>
<td>DELAWARE CITY CHURCH SPIRE, 1933</td>
<td>G-1751 Pg. 126</td>
<td>n</td>
<td>39° 34'</td>
<td>75° 35'</td>
<td></td>
<td>863.9 (986.5)</td>
<td>884.6 (547.5)</td>
</tr>
</tbody>
</table>

1 FT. = 0.3048008 METER

COMPUTED BY: L.A. SENASACK DATE: 10/29/46

CHECKED BY: G.O. FELLERS DATE: 10/29/46
RADIAL PLOT REPORT
PROJECT NO. PH-7(46)-C
DELAWARE RIVER
SURVEY NO. T-8776 to W. half of T-8775

1. GENERAL DESCRIPTION

Surveys Nos. T-8775 and T-8776 are two of twelve shoreline surveys in Project Ph-7(46)-C located along the Delaware River. Surveys Nos. T-8775 and T-8776 are located along the C. & D. canal between the Delaware River and Chesapeake City, Delaware. These surveys are to be compiled in accordance with instructions dated 25 March 1946 and 19 July 1947 by graphic photogrammetric methods.

2. LAYOUT

The layout of the maps, horizontal ground control and photograph centers are shown on the attached sketch.

3. PHOTOGRAPHS

U. S. Coast and Geodetic Survey single lens photographs taken with type "D" camera, focal length 12 inches; contact scale 1:16,000. Ratio prints at scale of 1:10,000 were used for this plot.

4. MANUSCRIPTS

Surveys Nos. T-8775 and T-8776 were ruled with polyconic projections, scale 1:10,000, and Delaware State Grids (5000 foot intervals). In addition, Survey No. T-8775 was ruled with New Jersey State Grids (5000 foot intervals) and Survey No. T-8776 was ruled with Maryland State Grids (5000 foot intervals). The projection and grid lines were ruled with the ruling machine and checked in the Washington Office.

5. CONTROL

The field party recovered 16 of 22 horizontal control stations in the area of this plot, 14 of which were identified. In addition, one new horizontal control station, namely, Bridge, 1946, was established and identified by the field party. Station CARROW, 1933, which was recovered and identified, falls outside the limits of photographic coverage and could not be used in the plot.

Two of the unrecovered stations, one of which was destroyed after the photographs were taken, and one of the recovered stations were identified in the compilation office.
6. FIELD INSPECTION

The field identification of the horizontal control and selection of substitute stations was very good.

7. SUMMARY

The distribution of the photographs was poor. In contrast to an overabundance of photographs in the eastern half of Survey No. T-8775, only a single flight over the western half of Survey No. T-8775 and over the area of Survey No. T-8776, was available.

The selection of substitute stations was good.

The distribution of control was fair. However, the identification of one of the existing control stations on the railroad bridge at the eastern end of Survey No. T-8776 and the establishment of an additional station at the extreme western end of the flight of photographs on Survey No. T-8776 would have been desirable.

DETAILS OF RADIAL PLOTTING

8. The scale of the projection sheets was determined in the Washington Office. The plot was made with celluloid templates.

9. The projection sheets for T-8775 and T-8776 were joined by matching common Delaware State grid lines after plotting all the horizontal control known to still exist in the area of the plot.

10. Since the plot on the eastern half of Survey No. T-8775 had been run previously, all templates used in the eastern half of the survey were relaid directly on the projection sheets and then the plot extended over the western half of Survey No. T-8775 and the entire area of Survey No. T-8776. The templates were laid and relaid several times due to insufficient photograph coverage before a satisfactory plot and good junction with the plot to the east were obtained. Minor adjustments to a few pass points and photograph centers were necessary in order to accomplish this. All of the control accurately identified on the office photographs was "held to" tangentially or better.

11. The positions of all pass points and photograph centers were then pricked through the templates directly onto the projection sheets.

12. The positions of all pass points and photograph centers were then verified by orienting the photographs directly beneath the projection sheets.

13. The positions of all pass points and photograph centers are within 0.5 millimeters of their correct geographic positions with the possible exception of those at the western end of Survey No. T-8776.
14. The identification of horizontal control and selection of substitute stations was good.

15. The photographic coverage for shoreline delineation was adequate; however, an additional flight of photographs along the Chesapeake and Delaware canal from the central part of Survey No. T-8775 westward would have been desirable.

Respectfully submitted
15 July 1947

Harry R. Rudolph
Supervisor

Approved and Forwarded
18 July 1947

Thos. B. Reed
Officer in Charge
Baltimore Photogrammetric Office
LAYOUT SHEET
Project Ph-T-46-C
Surveys Nos. T-8775 & T-8776

LEGEND
○ Office Photograph
○ Field Photograph
△ Triangulation Station

Note: All horizontal control stations (accompanied with their respective numbers, i.e. 686, 462) are listed on the following page.
<table>
<thead>
<tr>
<th>No.</th>
<th>NAME OF STATION</th>
<th>METHOD OF IDENTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>REEDEY POINT, C&amp;D CANAL S. BREAKWATER</td>
<td>Pricked direct</td>
</tr>
<tr>
<td></td>
<td>FLASHING WHITE LIGHT, 1933</td>
<td></td>
</tr>
<tr>
<td>457</td>
<td>DELAWARE CITY, C&amp;D CANAL LIFT BRIDGE,</td>
<td>By reference measurements</td>
</tr>
<tr>
<td></td>
<td>NORTH PIER, 1933</td>
<td></td>
</tr>
<tr>
<td>457</td>
<td>DELAWARE CITY, C&amp;D CANAL LIFT BRIDGE,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOUTH PIER, 1933</td>
<td></td>
</tr>
<tr>
<td>458</td>
<td>FORT DUPONT BLACK WATER TANK, 1933</td>
<td>Pricked direct as a landmark</td>
</tr>
<tr>
<td>459</td>
<td>DUPONT, 1933</td>
<td>Substitute Station</td>
</tr>
<tr>
<td>460</td>
<td>DELAWARE CITY CHURCH SPIRE, 1933</td>
<td>*Destroyed May 1946</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pricked in Comp. Office</td>
</tr>
<tr>
<td>460</td>
<td>DELAWARE CITY, SILVER STANDPIPE, 1933</td>
<td>No Recovery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pricked in Comp. Office</td>
</tr>
<tr>
<td>461</td>
<td>BRIDGE, 1946</td>
<td>Pricked direct</td>
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<tr>
<td>462</td>
<td>CARROW, 1933</td>
<td>Substitute Station</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not used in plot.</td>
</tr>
<tr>
<td>464</td>
<td>PORT PENN, 1933</td>
<td>Substitute Station</td>
</tr>
<tr>
<td>476</td>
<td>BAKER REAR RANGE LIGHT, 1933</td>
<td>Pricked direct</td>
</tr>
<tr>
<td>684</td>
<td>EAST BRIDGE, NORTH COUNTERPOISE, 1934</td>
<td>Recovered, Identified in compilation office</td>
</tr>
<tr>
<td>684</td>
<td>EAST BRIDGE, SOUTH COUNTERPOISE, 1934</td>
<td>No recovery</td>
</tr>
<tr>
<td>684</td>
<td>CHESAPEAKE CITY, THIRD LIFT BRIDGE,</td>
<td>No recovery</td>
</tr>
<tr>
<td></td>
<td>NORTH PIER, 1933</td>
<td></td>
</tr>
<tr>
<td>684</td>
<td>CHESAPEAKE CITY, THIRD LIFT BRIDGE,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOUTH PIER, 1933</td>
<td></td>
</tr>
<tr>
<td>685</td>
<td>MIDDLE BRIDGE, NORTH COUNTERPOISE, 1934</td>
<td>Pricked direct</td>
</tr>
<tr>
<td>685</td>
<td>MIDDLE BRIDGE, SOUTH COUNTERPOISE, 1934</td>
<td>Pricked direct</td>
</tr>
<tr>
<td>No.</td>
<td>Name of Station</td>
<td>Method of Identification</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>685</td>
<td>CHESAPEAKE CITY, LIFT BRIDGE, NORTH PIER 1933</td>
<td>No recovery</td>
</tr>
<tr>
<td>685</td>
<td>CHESAPEAKE CITY, LIFT BRIDGE, SOUTH PIER, 1933</td>
<td>No recovery</td>
</tr>
<tr>
<td>687</td>
<td>BETHEL (USE) 1934</td>
<td>Substitute Station</td>
</tr>
<tr>
<td>A</td>
<td>PEA PATCH ISLAND LIGHT, 1933</td>
<td>Pricked direct</td>
</tr>
<tr>
<td>B</td>
<td>FORT DELAWARE (USE) 1937</td>
<td>Substitute station</td>
</tr>
<tr>
<td>C</td>
<td>CHESAPEAKE CITY, CATHOLIC CH. SP. 1893</td>
<td>Pricked direct as a landmark</td>
</tr>
</tbody>
</table>

* Photograph taken prior to destruction of this station.
T-8775 is one of 12 shoreline manuscripts in Project No. Ph-7(46C) located along the Delaware River and Bay. These surveys are to be compiled in accordance with instructions dated 25 March 1946 and 19 July 1946 by graphic photogrammetric methods. Instructions filed in Div. of Photogrammetry Office files.

26. CONTROL

See layouts of control submitted with the radial plot reports. A list of stations on Form No. W-2388-12 is included in this report.

27. RADIAL PLOT

The area of Survey No. T-8775 is included in two combined radial plots made with celluloid templets. The western portion of Survey No. T-8775 is included in the radial plot for that area and Survey No. T-8776. The eastern portion of survey No. T-8775 is included in the radial plot for areas of Surveys Nos. T-8777 to T-8779. The reports for these radial plots were submitted to the Washington Office on 18 July 1947 and 20 June 1947, respectively.

28. DELINEATION

The compilation is in accordance with the written instructions pertaining to Project No. Ph-7(46) dated 19 July 1946. For delineation of interior detail of the eastern half of this survey, see topographic survey No. T-8753.

The area north of the north shore of the C & D Canal, west of Biddle Point was delineated as "Grass and Brush", but may be a combination of grass and brush, marsh and spoll ground.

Two dark lines on photograph No. 46-D-1978 at the old bridge abutments of the St. Georges bridge were delineated as road blocks.

30. MEAN HIGH WATER LINE

The shoreline was delineated from single lens photographs (1:10,000 scale, field ratio prints) in accordance with the field identification shown thereon. Where no inspection was furnished (approximately 20%) a stereoscopic study of the photographs was employed.
<table>
<thead>
<tr>
<th>Chart Let.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>679(148)</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
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<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6A</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>12G</td>
</tr>
<tr>
<td>13(RF)</td>
</tr>
<tr>
<td>13(RR)</td>
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<tr>
<td>14</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>14A</td>
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<td>16</td>
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<td>17</td>
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</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>679(148)</td>
</tr>
</tbody>
</table>

**LANDMARKS AND AIDS TO NAVIGATION**

1. Chesapeake & Delaware Canal Light No. 1
2. " 2
3. " 3
4. " 4
5. " 5
6. " 6A
7. " 8
8. " 9
9. " 12G
10. " 13(RF)
11. " 13(RR)
12. " 14
13. " 15
14. " 14A
15. " 16
16. " 17
17. " 18
18. " 19
19. " 20
20. " 22
21. " 24
22. Delaware City Branch Canal
23. " 2
24. Baker (RR) (Δ)
25. Fort Delaware (Pea Patch Id. Lt. Δ)
   Fort Dupont Bl. Water Tank
   Delaware City Standpipe
31. **MEAN LOW WATER LINE**

Only that portion of the mean low water line identified by the field party was delineated on the map manuscript. The only place where the field party identified the definite mean low water line was on the west side of the Delaware River between the mouths of the C&D Canal and the Delaware City Branch Canal.

32. **DETAILS OFFSHORE FROM THE MEAN HIGH WATER LINE**

Delineated in accordance with field identification.

33. **WHARVES, AND SHORELINE STRUCTURES**

Delineated in accordance with field identification.

34. **LANDMARKS AND AIDS TO NAVIGATION**

See form No. 567 attached to this report, and to the report for Topographic Survey No. T-8753. See also side heading No. 2 of the field report for Surveys T-8775 and T-8776, regarding Canal lights Nos. 21 and 23, and Discrepancy Sheet also included in the field report.

35. **HYDROGRAPHIC CONTROL**

Three photo-hydro points have been shown on this survey. Their descriptions are as follows:

- No. 5310 Bowline stanchion of north barge. (sunked)
- No. 5311 35 foot brick chimney on yellow boiler house.
- No. 5312 Chimney on NE house.

36. **LANDING FIELDS AND AERONAUTICAL AIDS**

None

38. **GEOGRAPHIC NAMES**

Geographic names were taken from final names standards dated 12/18/46 furnished by the Washington Office. A list of geographic names is attached to this report.

39. **JUNCTIONS**

The junctions to the south with Survey No. T-8778 to the west with Survey No. T-8776, and to the north with Survey No. T-8774, have been made and are in agreement. Junction with Survey No. T-8777 to the east is in an all water area.
40. BRIDGES

All bridge information for the area covered by this report as listed in the U. S. Engineers "List of Bridges Over Navigable Waters in the U. S." dated 1 July 1941 was verified in the field, all clearances were carefully measured with a steel tape, and the published descriptions and clearances were found to be correct except for the following discrepancies, which were not reported to the Local District Engineer: See Review Report.

CHESAPEAKE AND DELAWARE CANAL, DELAWARE AND MARYLAND

<table>
<thead>
<tr>
<th>Bridge at:</th>
<th>Field Measurements</th>
<th>Listed Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware City, Del.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical Clearance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed above MHW</td>
<td>6.2'</td>
<td>6.75'</td>
</tr>
<tr>
<td>Reedy Point, Del.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal Clearance</td>
<td>169.5'</td>
<td>168.2</td>
</tr>
<tr>
<td>Vertical Clearance at</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MHW, raised</td>
<td>132'</td>
<td>Not listed</td>
</tr>
<tr>
<td>down</td>
<td>12'</td>
<td>MHW clearance not</td>
</tr>
<tr>
<td></td>
<td></td>
<td>listed (12' at MLW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>listed)</td>
</tr>
<tr>
<td>St. Georges, Del.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal clearance</td>
<td>399.2'</td>
<td>400'</td>
</tr>
<tr>
<td>Vertical clearance at</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MHW</td>
<td>138.5'</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

44. COMPARISON WITH EXISTING TOPOGRAPHIC SURVEYS

Survey No. T-8775 has been compared in detail with the U. S. Geological Survey, Wilmington, quadrangle, scale 1:62,500, edition of 1906, reprinted 1944; and with the Corps of Engineers, Wilmington quadrangle, edition of 1919, reprinted 1921. This survey is in agreement with the quadrangles with the following exceptions:

The area along the Chesapeake and Delaware Canal has been altered to a great extent since the quadrangles were surveyed. The canal has been widened and also extended from Biddle Point to Reedy Point.

The area of marsh around Pea Patch Island is larger than shown on the quadrangles.
45. **COMPARISON WITH NAUTICAL CHARTS:**

Survey No. T-8775 has been compared with Nautical Charts Nos. 294 and 570, scales 1:40,000 and 1:20,000 respectively, and found in good agreement.

The following topographic information shown on T-8775 is of sufficient importance to warrant immediate application to the chart:

None.

The following topographic details above the plane of mean high water are not shown on this manuscript but are believed to still exist and should be carried forward on the chart:

None.

Low water features are shown in part and should be completed by the hydrographic party.

Respectfully submitted
22 October 1947

[Signatures]

Photogrammetric Engineer

Photogrammetric Office Reviewer

Approved and forwarded 26 October 1947.

Officer in Charge
Baltimore Photogrammetric Office
I recommend that the following objects which have been inspected from seaward to determine their value as landmarks, be charted on the charts indicated.

The positions given have been checked after listing by

Joseph W. Vonasek

Chief of Party.

<table>
<thead>
<tr>
<th>CHARTING NAME</th>
<th>DESCRIPTION</th>
<th>SIGNAL NAME</th>
<th>LATITUDE</th>
<th>LONGITUDE</th>
<th>METHOD OF LOCATION AND SURVEY NO.</th>
<th>DATE OF LOCATION</th>
<th>CHARTS AFFECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHESAPEAKE AND DELAWARE CANAL NO. 13</td>
<td>CANAL RANGE REAR</td>
<td></td>
<td>39 33 106</td>
<td>75 37 1056</td>
<td>N.A. Rad.Plot 1927 T-8775-6</td>
<td>1946</td>
<td>x 294-570</td>
</tr>
<tr>
<td>CHESAPEAKE &amp; DELAWARE CANAL NO. 14</td>
<td>No. 15</td>
<td></td>
<td>39 33 536</td>
<td>75 38 349</td>
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<td></td>
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<tr>
<td></td>
<td>No. 14A</td>
<td></td>
<td>39 33 543</td>
<td>75 38 1163</td>
<td></td>
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<td>No. 16</td>
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<td>39 33 204</td>
<td>75 39 360</td>
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<td>39 32 1731</td>
<td>75 39 511</td>
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<td>39 32 1410</td>
<td>75 39 1269</td>
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<td>75 39 1213</td>
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<td></td>
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<td>39 32 1203</td>
<td>75 40 753</td>
<td></td>
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<td>No. 22</td>
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<td>39 32 1042</td>
<td>75 41 30</td>
<td></td>
<td></td>
<td>x 570</td>
</tr>
<tr>
<td></td>
<td>No. 24</td>
<td></td>
<td>39 32 1114</td>
<td>75 41 536</td>
<td></td>
<td></td>
<td>x 570</td>
</tr>
</tbody>
</table>

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.
GEOGRAPHIC NAMES

* Biddle Point
* Cedar Creek
* Chesapeake and Delaware Canal
* Delaware City
* Delaware City Branch Canal
* Delaware River
  * Dutch Neck
  * Dutch Neck Road
* Fort Delaware
  * Fort-Dupont Governor Basin Health
* Ice House Point
* Joy Run
* Loxwood Grove
  * N.E. & W (Newark and Delaware City Branch) Pennsylvania R.A.
* Pea Patch Island
* Reedy Point
* St. Georges
* St. Georges Creek
* Scott Run
* Shingle Landing

* U.S. No. 13
* Delaware

Names preceded by * are approved. 11/22/49.
L. Heck.
35. **Topographic Stations:** Forms 524 for SPOT, 1946 and YANE, 1946; for Chesapeake and Delaware Canal lights, 2, 3, 4, 5, 6A, 8, 9, 12, 13RF; and for Delaware City Branch Canal lights 2 and 3 have been filed under T-8775.

\*43. **Comparison with previous Topographic Surveys:**

<table>
<thead>
<tr>
<th>Station</th>
<th>Scale</th>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-138</td>
<td>1:10,000</td>
<td>1841</td>
<td>no contours</td>
</tr>
<tr>
<td>T-140</td>
<td>1:10,000</td>
<td>1841</td>
<td>no contours</td>
</tr>
<tr>
<td>T-1511b</td>
<td>1:10,000</td>
<td>1882</td>
<td>20 ft. contours (see 45 below)</td>
</tr>
<tr>
<td>T-1547a</td>
<td>1:20,000</td>
<td>1882</td>
<td>no contours in area common to 87-8775</td>
</tr>
</tbody>
</table>

T-8775 supersedes these maps for nautical charting purposes.

44. **Comparison with Topographic Quadrangles:**

- USGS Wilmington 1:625000 ed Mar 1906, rep 1944
- USE Wilmington 1:625000 ed 1919 rep 1921
- USE Wilmington 1:125000 April 1942

45. **Comparison with Nautical Charts:**

- 294 1:40,000 rev 7/19/48
- 570 1:20,000 Sept 1943, rev 11/15/48

No significant differences occur between the map and the charts.

1. **Chart:**
   - **Dolphins:** A line of 12 dolphins extends from light 14A to the highway bridge at St. Georges.
   - **Manuscript:** Only 2 dolphins were noted by field inspection. No others were visible on the photographs.

2. **Chart:** One dolphin at the C & O Canal entrance to Delaware City Branch Canal.
   - **Manuscript:** 2 dolphins (visible on the photographs), one on each side of the canal.

3. **Chart:** A line of 14 dolphins at Reedy Point Mooring basin.
   - **Manuscript:** A line of 31 dolphins at that place (visible on the photographs).

4. **Chart:** A line of 7 dolphins along the north side of the canal east of the lift bridge; and a line of 7 along the south side west of that bridge.
   - **Manuscript:** 9 dolphins and 5 dolphins in the same areas.

5. **Chart:** One dolphin at Bulkhead Shoal entrance and Delaware City Branch Canal.

\* For contours and interior detail see contemporary survey T-8775.
Manuscript:—No dolphin visible on the photographs and none noted by field inspection.

Traffic Light:—

Chart:—The light is indicated at the east end of the north jetty at Reedy Point.

* Manuscript:—The light is placed (by field inspection) near canal light No. 4.

Shoreline:—North of Reedy Point the shoreline has advanced as much as 500 feet, south of the point it has receded as much as 350 feet.

Bridges:—Discrepancies in clearances have been referred to the field for additional check.

Cable Area Between Mainland and Pea Patch Island:—Field Edit Report for T-3753 — "No visual evidence found—Government probably reserved area but never used it. Referred to Hydrography."

Delaware City Wharf:—The charts show this wharf as "ruins" with the railway leading up to, but not on, the wharf.

This wharf is drawn entire on the map manuscript under review and on the quadrangle (T-3753). No field inspection was furnished and no comments or corrections were made by field edit. The appearance of the area on the photographs from which T-3775 was compiled suggests that the wharf is not in good condition, and that the various changes in the canal entrance since its delineation on T-1511b(1892) have probably led to its abandonment for traffic, as shown on charts 294 and 570.

The delineation of the wharf was not changed during review, but a request for comments has been submitted to the field party.

* Re-Edit Notes, R.A. Horn, Aug. 1950
Traffic Light: Mounted on same tower as Light 2, vertically, a few feet below light 2.
Bridges:
1. Delaware City, Del., single span bascule; HCL 58, VCL (NHW) 10' (closed)
2. Reedy Point, Del., single span, vertical lift; HCL 166, VCL (NHW) 139' (open), 6' (closed)
3. St. George's, Del., single span fixed; HCL 974, VCL (NHW) 139.5’
Wharf & Railway, Delaware City:

Wharf is in ruins; railway extends onto wharf.

Except for bridges above, these corrections were made prior to reproduction.
Clearance corrections for this bridge were made in red on the registered map.

46. Adequacy of Results and Future Surveys
This shoreline map meets the Bureau requirements of accuracy and is adequate as a base for
Reviewed by:

Lena T. Stevens

Approved by:

A. V. Griffith
Chief, Review Section
Division of Photogrammetry

H. A. Edmonston
Chief, Nautical Chart Branch
Division of Charts

O. S. Reading
Chief, Division of Photogrammetry

W. H. Scarfe
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