

9772

Diagram 296-2

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

### DESCRIPTIVE REPORT

Type of Survey Hydrographic  
Field No. HSB-10-2-78  
Office No. H-9772

#### LOCALITY

State Pennsylvania and New Jersey  
General Locality Delaware River  
Locality Trenton to Florence

1978

CHIEF OF PARTY  
LCDR T.W. Richards

#### LIBRARY & ARCHIVES

DATE March 23, 1982

AREA 2  
PART  
12314 - see Record of Application  
to sign off

9772

**HYDROGRAPHIC TITLE SHEET**

H-9772

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

FIELD NO.

HSB 10-2-78

State Pennsylvania and New Jersey

General locality Delaware River

Locality ~~Reobling to Trenton~~ Trenton to Florence

Scale 1:10,000

Date of survey 5 July to 24 Oct., 1978

Instructions dated \_\_\_\_\_

Project No. OPR D218-HFP-78

Vessel NOAA Launch 1286, 1283

Chief of party LCDR Thomas W. Richards

Surveyed by Lt. Marcella J. Bradley, Lt. Stanley Iwamoto

Soundings taken by echo sounder, hand lead, pole Raytheon 719-B

Graphic record scaled by MB, SI, RS, LG, DE, JD, RJ, CG, TR, JO

Graphic record checked by MB, RS, LG, SI, DE, JD

Protracted by \_\_\_\_\_

Field Sheet PDP 8/e  
Automated plot by AMC Kyninetics 1200  
Xynetics 1201

Verification by \_\_\_\_\_

Soundings in fathoms feet at MLW MLLW

REMARKS: \* Change No. 1, 21 Dec 1977

*All times are GMT.*

" " 2, 14 Mar 1978

" " 3, 20 Apr 1978

" " 4, 25 July 1978

" " 5, 1 Aug 1978

" " 6, 14 Sep 1978

Marcella Bradley, Stan Iwamoto, Robert Snow, Jon Daniel, Lloyd Gilden, C Gorski,

John Oswald, Dave Elliott, Thomas Richards, Ron Jones.

*Red notes in the Descriptive Report were made during verification  
Blue notes in the Descriptive Report were made during Q.C. evaluation*

DESCRIPTIVE REPORT  
To Accompany  
HYDROGRAPHIC SURVEY H-9772  
HSB-10-2-78

Scale: 1:10,000

Chief of Party: LCDR Thomas W. Richards

Officer-in-Charge: LT Marcella J. Bradley

Hydrographic Surveys Branch, Hydrographic Field Party #3  
Launches 1283 and 1286

A. PROJECT

This survey was accomplished under Project Instructions OPR-D218-HFP-78, (originally OPR-492-HFP-77), Delaware River, June 13, 1977 supplemented by the following:

Change No. 1, 21 DEC 77  
Change No. 2, 14 MAR 78  
Change No. 3, 20 APR 78  
Change No. 4, 25 JUL 78  
Change No. 5, 1 AUG 78  
Change No. 6, 14 SEP 78

B. AREA SURVEYED

This survey covers the Delaware River and certain adjacent creeks and basins from the Penn Central Railroad Bridge at Trenton, New Jersey (the head of power boat navigation) downstream to Long.  $74^{\circ}48'$ , near Florence, New Jersey. Operations were based out of the Bordentown Yacht Club, Bordentown, New Jersey, and were conducted from 5 JUL 78 through 24 OCT 78 (JD 186-297) inclusive.

C. SOUNDING VESSEL

All soundings on this survey were obtained from NOAA Launches 1286 and 1283, EDP numbers 1286 and 1283, respectively. These are 17-foot Monark utility boats, each powered by an 85 hp outboard engine. The vessels are identical except for an extra fuel tank installed on 1283. Vessel configuration is shown in Photographs #1 and #2. No problems were encountered with the sounding vessels which are well suited to this type of survey.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

All echo soundings were obtained using a Raytheon 719-B fathometer, SN 6211, with a calibrated velocity of sound through water of 800 fms/sec. The sounding transducer is mounted permanently through the hull of the sounding vessel. (See Photograph #2) No faults in the equipment were observed which might have affected the accuracy of sounding. A transducer draft correction of 1.0 feet and all fathometer initial trace corrections (generally maintained at zero on line) have

been applied to soundings on the field sheets and will be applied via the corrector tapes to the smooth sheet during processing at AMC.



Photograph #1



Photograph # 2  
Robert Snow pointing to transducer

A settlement and squat test for Launch 1286 was conducted on 22 MAR 78 in calm water with no tidal effect in the VAB Barge Turning Basin, Kennedy Space Center, Florida. Results of the test are included in the appendix and indicate a +0.2 ft. correction at all survey speeds. A settlement and squat test for Launch 1283 was conducted on 11 and 13 OCT 78 in the Delaware River in calm water on a falling and a rising tide. Tidal correctors were interpolated between frequent level readings at 0 RPM near a channel buoy. Results of this test are also included in the Appendix and also indicate a +0.2 ft. correction at all survey speeds. Settlement and squat corrections will be applied via the TC/TI tape during smooth plotting at AMC and were not applied to the field sheets.

Velocity corrections and any residual instrument corrections were determined from standard direct comparison bar checks taken daily during period of slack current. These corrections were not applied to the field sheets and will be applied during smooth plotting at AMC via a velocity corrector table. The bar used by HFP-3 for bar checks has chain leads which were checked on JD 186, 5 JUL 78.

### E. HYDROGRAPHIC SHEETS

Field sheets were prepared in the field using HFP-3's PDP-8 computer and complot plotter. Field records will be sent to AMC for verification and smooth plotting.

A plotter malfunction necessitated manual plotting of field data for a portion of this survey. Sheet 3 of 3 is hand-plotted. All data was logged manually then computer reformatted. Sheets 1 and 2 of 3 were computer plotted on HFP-3's hydroplot system. Sheet 1 shows main scheme hydro and Sheet 2 shows crosslines, detached positions, and buoys for the area north of Crosswicks Creek. Sheet 3 includes all data south of Crosswicks Creek on this survey.

The manual plot of Positions 487-537, JD 215, is shifted through approximately one degree of arc. This was a result of initialing the manual plot on a station not shown on that boatsheet. Careful inspection of this data shows it will machine plot correctly. Other minor discrepancies in the machine plotted positions of control stations on Sheet 3 have been detected as work progressed. These discrepancies will be resolved when the sheet is smooth plotted as they were caused by a malfunction of the HFP-3 plotter.

Notes on this sheet <sup>← field sheet</sup> south of Lat.  $40^{\circ}11.2'$  referring to MLW in fact refer to a survey datum which is described in the field tide note, and which is 0.7 foot above MLW. Notes referring to MHW refer in fact to MHW as referenced to bench mark (9487-A) at the Fieldsboro Tide Station.

### F. CONTROL STATIONS

All control stations are of third order, class one or better accuracy. Control station positions for this survey are from a 1978 traverse by LCDR A. Y. Bryson, Photo Party 61. Records of all computations reside with Coastal Mapping Division, AMC, Norfolk, Virginia. A copy of the geodetic control report is included with the survey data. A listing of control stations used by HFP-3 is also appended.

### G. HYDROGRAPHIC POSITION CONTROL *See Verification Report Section 2.2.*

Sounding line position control for this survey was range/azimuth. The following control equipment was used:

<u>Equipment</u>	<u>S/N</u>	<u>JD's Used</u>
Wild T-2, read to nearest minute	S/N 12118	JD 168-297 inclusive
Del Norte Master "78"	S/N 263	JD 187-297 inclusive
Del Norte Master "78"	S/N 278	JD 168
Del Norte Remote "76"	S/N 251	JD 168-297, inclusive
Del Norte Trisponder (DMU)	S/N 429	JD 168-202, 223-297, inclusive
Del Norte Trisponder (DMU)	S/N 188	JD 215

Del Norte equipment was calibrated, usually twice daily, along distances computed using Program RK 407, geodetic direct and inverse computations, between control stations. Del Norte correctors so determined will be applied via corrector tapes to the smooth sheet, and were so applied only to Sheets 1 and 2 of the field plot.

#### H. SHORELINE

Shoreline details were transferred to the field sheets from Class III (3) Manuscripts TP-00234 ~~and~~ TP-00236 dated AUG 75. Change No. 3 to the project instructions deleted field edit requirements for these maps and provided no photo-hydro support data for this survey. Consequently, shoreline features and landmarks are verified by hydrographic methods. No changes to the manuscript shoreline were noted during the survey. NOAA Forms 76-40, "Nonfloating Aids or Landmarks for Charts" prepared by HFP-3 showing landmarks verified to be added or to be deleted are included in the Appendix.

#### I. CROSSLINES See Verification Report - section 3.a.

Crosslines were run at 36% of total hydrography. Agreement at crossings is excellent, generally within 0 to 1 foot.

#### J. JUNCTIONS See Verification Report, section 5

There were no junctioning requirements for this survey.

#### K. COMPARISON WITH PRIOR SURVEYS

##### PRESURVEY REVIEW ITEMS

1. The submerged pilings charted in the vicinity of  $40^{\circ}10.51'$ ,  $74^{\circ}44.25'$  no longer exist. This area continues to uncover at low water and was examined visually at low water. These pilings should not be charted. Concur, investigated as per IPS instructions.

*Submerged pilings from an unknown source.*

USCGAUX  
2.  
HSPS  
chart  
letters  
1402/71  
1559/75

2. The dangerous sunken wreck, PA, charted at  $40^{\circ}10.4'$ ,  $74^{\circ}43.8'$  is not verified. A chain drag was attempted over the charted position on JD 255 but was aborted due to a rough bottom which made dragging impracticable. A group of 16 pilings, bare 8 ft. at the survey datum, was located at  $40^{\circ}10.42'$ ,  $74^{\circ}43.83'$  very near the charted position of this item (see Photograph #3). The hydrographer believes this group of pilings was mistaken for a wreck and reported as such. Recommend that the sunken wreck be deleted from the chart and that the group of pilings be charted. Recommend wreck be retained since pilings plot at approximate position of debris or piling on the chart.

*Quality control agrees with hydrographer's recommendation.*



Photograph # 3  
Vicinity PSR # 2

- ✓ 3. The dangerous sunken wreck charted at  $40^{\circ}10.25'$ ,  $74^{\circ}44.01'$  is verified and should be charted as partially submerged at  $40^{\circ}10.27'$ ,  $74^{\circ}44.01'$ . See Photo 3-A. *Concur, plotted as visible wreck* Wreck from T-8765 (1946-49)



3-A

- ✓ 4. A shoal reported to be bare 5 feet for a length of 30 feet by 7 feet wide at MLW in the vicinity of  $40^{\circ}10.25'$ ,  $74^{\circ}43.63'$  is not verified as described. There is an area approximately 350 meters by 50 meters extending from  $40^{\circ}10.33'$ ,  $74^{\circ}43.85'$  to  $40^{\circ}10.17'$ ,  $74^{\circ}43.70'$  with depths from one to six feet at the  
Reported shoal from CL-1122/77

survey datum and several rocks, awash or baring one to two feet. In addition, there is a shoal slightly downstream at 40°10.01', 74°43.56' with a least depth of one foot at the sounding datum. These shoals should be charted as indicated on the field sheet. *Concur* The reported shoal is considered disproved

5. <sup>present survey</sup> The rocks reported, PA, charted at 40°09.87', 74°43.63' were found bordering the channel as reported. Rocks were also found slightly upstream of this position at 40°09.92', 74°43.67'. These rocks should be charted as shown on the field sheet. *Concur* Rock from CL 1314/70 disproved <sup>present survey</sup>
6. The dangerous sunken wreck, PA, charted at 40°09.6', 74°43.4' should be removed from the chart. Telephone conversation with the Office of the Commandant (GMMI/83), United States Coast Guard, Washington, D.C., telephone 202-426-1455, identified the vessel in Notice to Mariners 14 of 1964 as the tug Salem, registry number 253364. Further conversation with the Coast Guard Office of Vessel Documentation, telephone 202-426-1497, verified this tug with this same registry number is still in operation and belongs to the American Dredging Company. This was further confirmed by Mr. Don Roder of the American Dredging Company, telephone 215-628-3000. The tug was raised shortly after it sank and should be removed from the chart. *Concur* ~~22<sup>nd</sup> Ed of Chart identifies area - Ed~~
7. The rocks reported, PA, 1975, charted in the vicinity of 44°09.5', 74°43.21' were found at 44°09:57', 74°43.23'. There are many rocks in this vicinity, <sup>Reported</sup> all of which should be charted as shown on the ~~field sheet~~ <sup>rocks from</sup> ~~field sheet~~. *Concur* ~~23<sup>rd</sup> Ed of Chart identifies area - Ed~~ <sup>CH 205/75</sup>  
<sup>present survey</sup> <sup>dragged area</sup>
8. The 13' ~~sounding~~ reported, charted in the vicinity of 40°08.01', 74°45.0' was located approximately 30 meters outside the channel at 40°08.04', 75°45.06' and should be charted as indicated on the ~~field sheet~~. *Concur* <sup>Depth from present survey should be charted in the area</sup> <sup>present survey</sup> <sup>originating w/ T-8765 (1946-49)</sup> <sup>Sdg. from BP 94372</sup>
9. The wreckage <sup>present survey</sup> charted in the vicinity of 40°08.3', 74°45.86' still exists along with some additions which are shown on the field sheet, and should be charted as indicated. (See Photographs #4 thru 7 on page 9.) *Concur* - chart as shown on present survey <sup>from an unknown source</sup>
10. The area reported bare at MLW, 1969, charted in the vicinity of 40°07.28' and 74°45.36' continues to bare and is even more extensive than is presently charted. As observed by two crew members stranded while installing a tide gage here, and verified by the centerline survey of this creek conducted JD 236, the entire width of the creek within the limits of the orange zero foot contour is exposed at low water. *Concur* - chart as shown on present survey.





4



5



6



7

30. Rocks reported through CL-97/78 to be visible at low water in the vicinity of  $40^{\circ}11'15''$ ,  $74^{\circ}45'30''$  are not verified and should not be charted. On JD 255, a chain drag was conducted covering the west side of the Moon Channel between can buoys "103" and 105" with no hangs encountered. The fathometer trace obtained during the chain drag and during previous searches of the area is singularly smooth and not jagged as it would be were there rocks on the bottom. No rocks were visible in this vicinity nor along the adjacent shore during visual inspection by HFP-3 on three separate occasions at low water. Also, careful examination of the field sheet shows ~~no~~ indication of a rocks ledge in this particular area as had been indicated by a note on the chartlet included with the description of this item.

Eugene M. Pester, Jr., the observer who reported this item, was contacted via telephone (215-946-5580) on September 5, 1978. Mr. Pester recalled reporting this item. It had been described to him by a man with whom he was not familiar during the course of a boat show last year. As Mr. Pester noted on his report, he is not personally familiar with this section of the river and has no personal knowledge of this particular rock or rocky ledge.

USCG Auxillary observers should be encouraged to limit their reports to items with which they are personally familiar. The hydrographer recommends no rocks or notes be applied to chart at this location. *Concur*

*Recommend deletion of rocky ledge as reported*  
As mentioned in the project instructions, Section 4.9, the copies of prior surveys were of little more than historical interest, the most recent having been conducted in 1844. In addition, details from the topographic surveys referred to in Change No. 6 to the project instructions have no doubt been applied to the current edition of Chart 12314, the most current of these having been completed in 1950. Further comparisons of this survey will be reserved for discussion in the next section, "Comparison With the Chart."

#### L. COMPARISON WITH THE CHART

This survey was compared with Chart 12314, 1:20,000, 22nd Ed., July 30/77.

1. The rocky area charted at  $40^{\circ}12.4'$ ,  $74^{\circ}46.03'$  is verified by Position 224-234 which are detached positions taken at low water and should be charted as shown on the field sheet. *Concur*  
*present survey*

2. The sewer charted at  $40^{\circ}12.22'$ ,  $74^{\circ}45.95'$  is verified by Position 239, a detached position taken at low water, and should be charted as shown on the field sheet. *✓*  
*Concur present survey*
3. Buoys "107", "108", and "113" have been discontinued by the Coast Guard and apparently should no longer be charted. *Concur*

(See 1978 Light List, page 298). Verified by conversation with USCG, Gloucester City, New Jersey.

4. The charted structures <sup>*originating w/ T-8765 (1946-49)*</sup> in the water on each side of the river at approximate Latitude  $40^{\circ}11'$ , approximately 50 meters south of the overhead power cable, still exist. These are apparently old supports for a bridge and bare approximately 10 feet at MHW. These structures are good landmarks (see Photographs 8 and 9). They should continue to be charted. *✓*



Photograph # 8

Photograph # 9

5. The two houses charted at  $40^{\circ}09.6'$ ,  $74^{\circ}43.5'$  and  $40^{\circ}09.3'$ ,  $74^{\circ}43.5'$  are no longer apparent from the river, nor do they appear on the manuscript. There is also no evidence of the intake pipe charted near the southerly of these two houses. These three items should be removed from the chart. *Remove houses. Contact C of E to confirm removal of pipe - otherwise remain as charted*
6. *PIERS* *Down* All docks in the mouth of Crosswicks Creek are floating docks, belonging to private yacht clubs. The docks *PIERS* are removed in the winter because of possible damage by ice flowing down the river. See Photograph #10. Also visible in Photograph #10 is a row of pilings extending along the edge of the creek from the bulkhead. The bulkhead marks the entrance to the

abandoned and overgrown Raritan River Canal. Similar bulkheading exists in varying degrees of ruin along the New Jersey bank of the Delaware River north of Crosswicks Creek. An example of this is in Photograph #12, near control station 004. This bulkheading was D.P.'d where the ruins falling into the river may be considered a hazard to navigation. *Concur - Chart as shown on present survey*



10



12

7. There are two piers charted in the vicinity of  $40^{\circ}08.2'$ ,  $74^{\circ}44.2'$  where only one pier actually exists. This pier abuts the property of the Stepan Chemical Company. Mr. Don J. Supinski, manager of this plant (Telephone 609-298-1222), was visited on 19 September 1978. Mr. Supinski, who is a yachtsman, was familiar with the chart and had previously searched the plant records for anything which might explain the second pier and had found no indication that another pier had ever existed there. Of the two charted piers, the downstream position is correct, and the shape of the upstream pier is correct, including the relative position of four dolphins. (See Photograph #13, page 13. ) *Chart as shown on present survey*

This area was visited frequently by HFP-3 at all stages of the tide, including low tide, with no ruins ever appearing. On JD 257, Launch 1286 was drifted back and forth over the charted position of the second pier with still no evidence of ruins discovered. A telephone conversation with Mr. Max Rogers, C321, confirmed that the upstream pier was applied from a Corps of Engineers permit dated 1955. The pier was extended in 1960 to it's present length. The original position was apparently not very *Concur*



#13

accurate. Later air photo revision showed the pier in the downstream position, and the cartographer, unable to conduct a field inspection, was obliged to leave the pier on the chart in the original position (in ruins since it did not show up on the photo), and chart a new pier in the correct downstream position. The hydrographer recommends the upstream pier in ruins be removed from the chart and the representation of the downstream pier be corrected to appear as it is shown in Photograph #13. ✓

8. A large culvert at  $40^{\circ}08.33'$ ,  $74^{\circ}44.35'$  is a good landmark, see Photograph #14, and should be charted as it is located by Position 627. *Concur* ✓
9. In the vicinity of  $40^{\circ}08.25'$ ,  $74^{\circ}44.45'$  the dredge limit lines extending from the shore to the channel should be removed. This area was dredged approximately two years ago, according to local knowledge and employees working at the steel plant, to keep the area clear around the intake pipes which are indicated by the two shorter lines extending from the bulkhead between the dredge limit lines. These intake pipes still exist, and buoys marking their ends were located by Positions 1175 and 1176. This area has since filled in again as indicated by the soundings on the field sheet. This bulkhead is not used for docking, see Photograph #15, and is therefore not kept clear for that purpose. The dredge limit lines should no longer be charted. *Concur* ✓



10. In the vicinity of  $40^{\circ}07.8'$ ,  $74^{\circ}44.5'$  there are no longer any docks or other features extending into the creek as presently shown on the chart. There exists a stranded barge, and near the bend in the creek, there is an extensive marine salvage operation with several large ships rafted out from the bulkhead, but no docks are evident. See ✓

Photographs #16 and #17. The manuscript is essentially correct here except for the single pier still shown extending from the bank that no longer exists. *Concur*



11. *The dredged area* In the vicinity of  $40^{\circ}08.2'$ ,  $74^{\circ}45.3'$ , the 40-foot rep 1973 has shoaled considerably. See copy of letter to USCG included in the appendix. *Concur*  
*Shoalest depth - 31 feet - see present survey depths*
12. In the vicinity of  $40^{\circ}07.75'$ ,  $74^{\circ}46.65'$  the charted ruins still exist as shown on the manuscript and should continue to be charted. *Concur*

13. Bridge and cable clearances were checked using methods described in Sounding Volume 5, Page 72.
14. Depths in the dredged channel do not vary significantly, generally within two-foot agreement, from the latest Corps of Engineers reported depths published on this chart. *See Verification Report, section 7b.*

#### M. ADEQUACY OF SURVEY

This survey is complete and adequate to warrant <sup>a</sup> its use to supersede prior surveys for charting. Field edit of shoreline features was "postponed" by Change No. 3 to the project instructions but should be completed. NOAA Forms 76-40

prepared by HFP-3 should be reviewed by Photogrammetry before this sheet is considered complete.

#### N. AIDS TO NAVIGATION

The caution printed on the chart concerning removal of certain floating Aids to Navigation during winter months remains in effect. All buoys in this section of the river were found to be approximately on station with the exception of Buoy "90", see letter to USCG in Appendix. Floating Aids to Navigation when used prudently in conjunction with charted ranges (positions of ranges verified by 1978 traverse) adequately mark the channel. See also Item 3, Section "L". All Aids to Navigation observed during the course of this survey are included in the 1978 Light List.

#### O. STATISTICS

Total number of positions	1324-
Nautical Miles Sounding Line	52.0
Nautical Miles Crossline	31.2
Nautical Miles Development	4.0
Total nautical miles hydro	87.2
Total square nautical miles hydro	3.2
Total number of bottom samples	18

#### P. MISCELLANEOUS

1. The sounding datum used for this survey in the field was 2.4 feet on the tide staff installed at Fieldsboro. It was later determined by leveling this staff to an established bench mark that this datum is approximately 0.7 foot above MLW. See the Field Tide Note included with this report.
2. A note should be included on the chart stating that rocky shoals frequently border the channel, particularly north of Crosswicks Creek, and that care should, therefore, be taken to remain in the channel when transitting at high speeds, no matter how small a craft one might have. Local boaters have mostly learned this fact for themselves in the most expensive manner possible.
3. Predicted tides for this area are very good, generally as far as times and heights of high and low water. It is difficult to interpolate the probable height of tide during periods between high and low water because the tide cycle in the river does not follow the usual sine curve. A note to this effect would prove useful either on the chart or in the tide tables.
4. On JD 199 hydro run using control set up 004,004,006 (Pos. 395-445) indicated a shoal extending into the channel at approximate position  $40^{\circ}09.42'$ ,  $74^{\circ}43.30'$ ,



which reduced to 6 feet at sounding datum. A report describing the 6-foot shoal was immediately sent to the Third Coast Guard District Commander.

Developments were conducted in the vicinity of this original 6-foot shoal on JD 254 (Pos. 1089-1111) and JD 264 (Pos. 1194-1209), using cartwheel patterns and arcs. A wire drag of the area was attempted on JD 279 (Pos. 1310-1311). The attempts to develop the shoal failed to verify the 6-foot sounding. Further inspection of the main scheme fathogram of JD 199 lead to a search for the shoal in another location, 40°09.47', 74°43.48'. On JD 265 (Pos. 1210-1227), a trace identical to the one from which the original shoal was plotted was obtained at the new location. Several searches were made of the area surrounding the first position of the shoal; all with negative results. The hydrographer is convinced the shoal was originally mislocated and finally accurately relocated well outside the channel.

All data using control set-up 004,004,006 on JD 199 was rejected due to observation error, and rerun on JD's 276 and 279. Copies of letters concerning the reported 6-foot shoal and the mislocation of the shoal as reported to the Third Coast Guard District Commander are included in the Appendix of this report.

Q. RECOMMENDATIONS

See sections "K", "L", "M", and "P". Field edit of the manuscripts in the Delaware River should be reconsidered.

R. AUTOMATED DATA PROCESSING

RK201	Grid, Signal & Lattice Plot	4/18/75
RK212	Visual Station Loat & Plot	4/1/74
RK216	Range-Azimuth Non Real Time Plot	2/5/76
RK300	Utility Program	2/10/76
RK330	Data Check & Reformat	3/12/76
RK407	Geodetic Inverse/Direct Computation	10/3/75
AM607	Elinore	5/21/75
AM500	Predicted Tide Generator	11/10/72

S. REFERENCE TO REPORTS

Control Report, 1978 Traverse, Delaware River, Photo Party 61, Lt. Cdr. Bryson.

Respectfully submitted,

*For/ Robert Lewis*  
LT Marcella J. Bradley  
OIC, HFP3

APPROVAL SHEET  
SURVEY H-9772 (HSB-10-2-78)

The hydrographic records transmitted with this report are complete and adequate to supersede prior surveys for charting with no additional field work recommended.

Direct daily supervision was not given by me during the field work.

Approved and forwarded,

*For Robert Lewis*  
THOMAS W. RICHARDS  
EDER, NOAA  
Chief, Hydrographic Surveys Branch



U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SURVEY  
Atlantic Marine Center  
Hydrographic Surveys Branch  
439 West York Street  
Norfolk, Virginia 23510

5 September 1978

TO: Commander  
Third Coast Guard District

THRU: Lt. Cdr. Thomas W. Richards *TWR*  
Chief, Hydrographic Surveys Branch

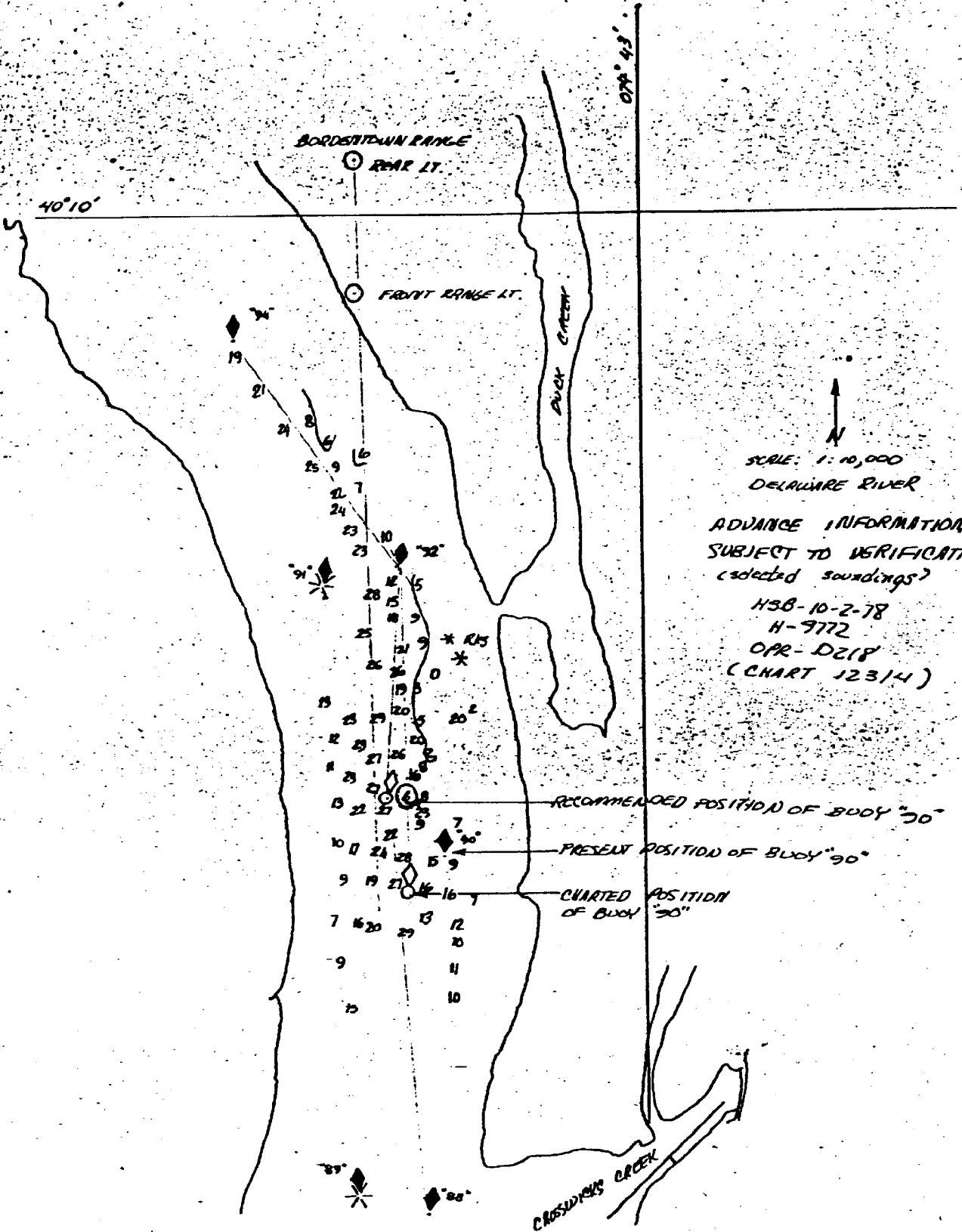
FROM: Lt. (j.g.) Marcella J. Bradley *Marcella J. Bradley*  
OIC, HFP-3

SUBJECT: Recommendation regarding Relocation of Buoy "90"  
Delaware River, New Jersey (Chart 12314)

The following recommendation is a result of a current National Ocean Survey hydrographic survey of the Delaware River:

Red num buoy "90" is off station. Instead of returning it to its charted position it should be moved upstream to mark the six foot shoal presently extending into the marked channel.  
(see attached chartlet)





SCALE: 1:10,000  
DELAWARE RIVER

ADVANCE INFORMATION  
SUBJECT TO VERIFICATION  
(selected soundings)  
H38-10-2-78  
H-9772  
OPR-D218  
(CHART 12314)



U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SURVEY  
Atlantic Marine Center  
439 West York Street  
Norfolk, Virginia 23510

12 October 1978

TO: Chief, Nautical Chart Branch  
C322 *J. Thomas W. Richards*

THRU: Lt. Cdr. Thomas W. Richards  
Chief, Hydrographic Surveys Branch

FROM: Lt. Marcella J. Bradley *Marcella J. Bradley*  
OIC, HFP-3

SUBJECT: Information concerning Chart 12314, Delaware River

The enclosed letter and chartlet have been transmitted to the Commander,  
Third Coast Guard District.



U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SURVEY  
Atlantic Marine Center  
439 West York Street  
Norfolk, Virginia 23510

12 October 1978

TO: Commander  
Third Coast Guard District

THRU: Lt. Cdr. Thomas W. Richards  
Chief, Hydrographic Surveys Branch

FROM: Lt. Marcella J. Bradley *Marcella J. Bradley*  
OIC, HFP-3

SUBJECT: Information concerning Chart 12314, Delaware River

The following recommendations are a result of a current National Ocean Survey hydrographic survey of the Delaware River:

- 1) Re my letter to you dated 5 September 1978, subject recommended relocation of buoy "90"; further investigation has shown the 6 ft. sounding extending into the channel to have been a spurious trace. The buoy, however, remains approximately 100 meters off station and does not accurately mark the channel. Recommend buoy "90" be returned to its charted position.
- 2) The two piers shown at approximate position  $40^{\circ} 08'.15$ ,  $074^{\circ} 44'.25$  are in fact one and the same. The proper location is indicated by the downstream pier. The proper configuration, including the relative position of four dolphins, is indicated by the upstream pier. Recommend a local notice to mariners to delete the pier in ruins at position  $40^{\circ} 08'.2$ ,  $074^{\circ} 44'.2$ .
- 3) Shoaling to 31 ft. in an area marked "40 ft. rep. 1973" has been observed at approximate position  $40^{\circ} 08'.2$ ,  $074^{\circ} 45'.3$  in an area adjoining Newbold Channel (see attached overlay). All information is subject to final office verification. Recommend a local notice to mariners to substitute the legend "31 ft rep 1978" for the legend "40 ft rep 1973" at position  $40^{\circ} 08'.2$ ,  $074^{\circ} 45'.3$ .
- 4) The privately maintained light, F G 18ft, at approximate location  $40^{\circ} 07'.75$ ,  $074^{\circ} 49'.13$  has been destroyed. There is a leaning piling remaining at this location which bares 2 ft at mean low water. Recommend a local notice to mariners to delete this light from the chart and replace it with the previously described obstruction.

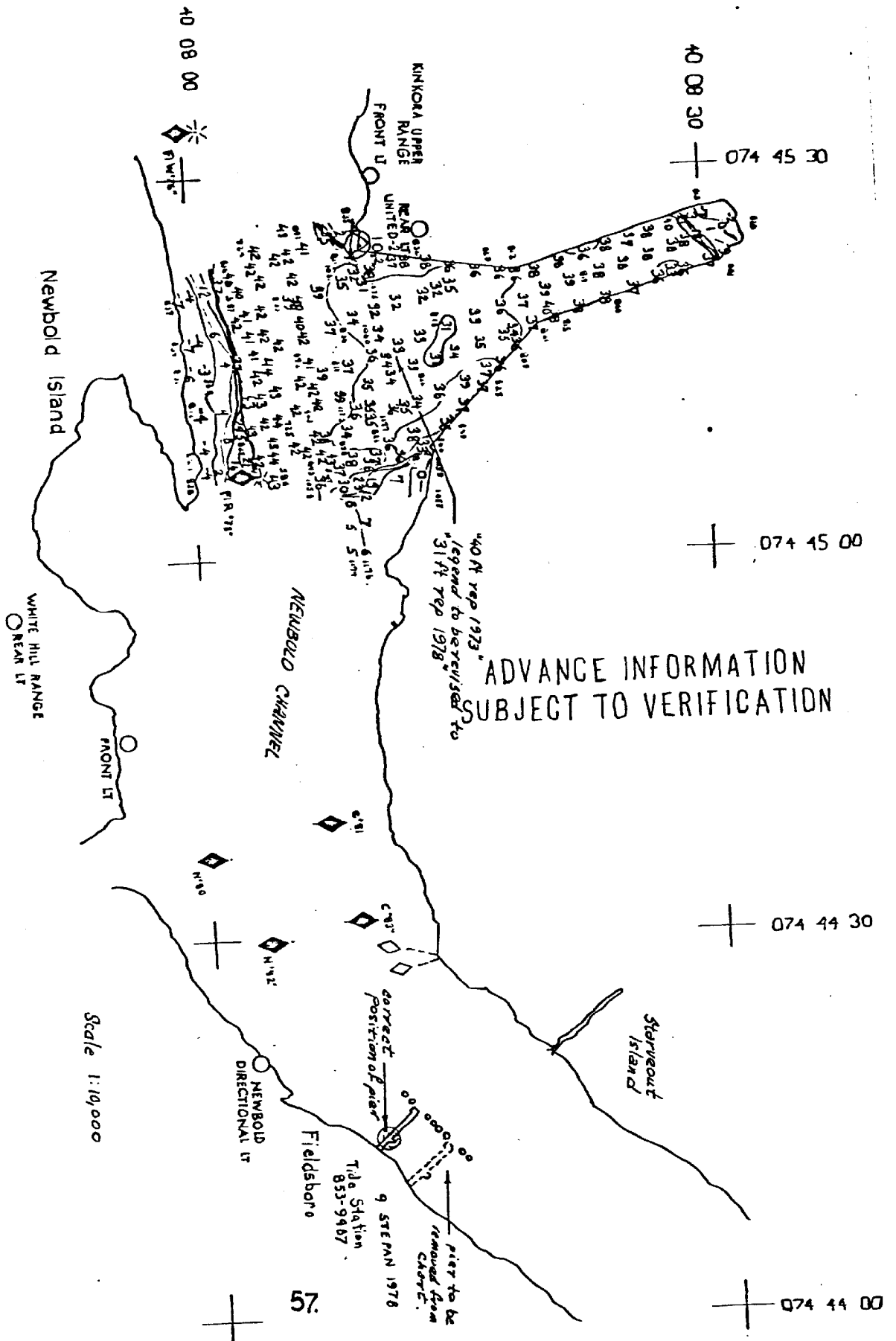


CHART # 12314

ITEM # —

ITEM DESCRIPTION: Shoaling to 31 ft at MLW in an area marked "40 ft rep 1973"

SOURCE: Chart 12314, 22<sup>nd</sup> ed., Jul 30/77.

INVESTIGATION DATE: 16 Aug 1978, 10278 TIME: 1700-1800 (GMT) VESSEL: Launch 1286 HFP-3

OIC: Lt. Marcella Bradley

REFERENCES: see attached overlay

Position No: 811-834 Volume 4 pg. 15-20  
(OPR-D218-HFP-78, H-9772, HSB-10-2-78)

CORRECTORS APPLIED:

Velocity

TRA Correctors

Predicted or

Actual Tide Correctors (field tides observed from Fieldsboro tide station #853-948, read at 30 min intervals. Gage location:  $\phi 40^{\circ}08.2$ ,  $\lambda 074^{\circ}44.3$ ) \*

GEODETTIC POSITION:

Latitude

Longitude

Charted:

$40^{\circ}08.2$

$074^{\circ}45.3$

Observed:

"

"

POSITION DETERMINED BY: Range/Azimuth technique, 3<sup>rd</sup> order, class I, control stations. Del Norte range  $\pm 3$  meters, T-Z azimuth read to nearest minute.

METHOD OF ITEM INVESTIGATION: Basic Hydrographic Survey of the Delaware River, OPR-D218-HFP-78, H-9772, HSB-10-2-78.

(\* Note: Field tides interpolated @ 15 min intervals from 30 min readings. Tides reduced to MLW referenced to bench mark "9487-A", elevation obtained from Rockville Tides Branch.)

CHARTING RECOMMENDATIONS: Substitute the legend "31 ft rep 1978" for the legend "40 ft rep 1973" until soundings from this survey are applied to the chart.

Compilation Use Only

CHART

APPLIED AS



SIGNAL LIST  
H-9772

001	4	40	12	30169	074	46	00116	250	0000	000000	FERRY, 1978
002	7	40	11	02478	074	45	17642	250	0000	000000	ELDER, 1978
003	1	40	10	48743	074	44	20575	250	0000	000000	ROSS, 1978
004	4	40	09	19536	074	43	09280	250	0000	000000	STUMP, 1978
005	4	40	08	18936	074	45	49869	250	0000	000000	61-6-NJ, 1978
006	4	40	09	55285	074	43	21095	139	0000	000000	BORDENTOWN FR, 1978
007	2	40	10	55264	074	44	31550	139	0000	000000	DUCK ISLAND FR, 1978
008	1	40	08	47917	074	43	42599	250	0000	000000	PA-1, 1978
009	7	40	08	09143	074	44	14138	250	0000	000000	STEPAN, 1978
010	1	40	08	09952	074	45	24885	250	0000	000000	UNITED, 1978
011	7	40	07	19358	074	46	41719	250	0000	000000	VALVE, 1978
012	2	40	07	49779	074	44	30299	250	0000	000000	61-2-NJ, 1978
013	4	40	07	37318	074	44	30563	250	0000	000000	US-2, 1978
014	6	40	07	16066	074	45	12397	250	0000	000000	61-3-NJ, 1978
015	5	40	07	14086	074	45	38227	139	0000	000000	US-3, 1978
016	2	40	07	26205	074	45	58269	250	0000	000000	61-4-NJ, 1978
017	0	40	08	00747	074	45	57156	250	0000	000000	61-5-NJ, 1978

SEE SECTION "F"

NOAA FORM 76-40  
(8-74)

Replaces C&GS Form 567.

TO BE CHARTED  
 TO BE REVISED  
 TO BE DELETED

REPORTING UNIT  
(If field party, ship or office)

HFP-3

STATE

Penn. & N.J.

LOCALITY

Delaware R.

DATE

10/30/78

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY

HYDROGRAPHIC PARTY  
 GEODETIC PARTY  
 PHOTO FIELD PARTY  
 COMPILATION ACTIVITY  
 FINAL REVIEWER  
 QUALITY CONTROL & REVIEW GRP.  
 COAST PILOT BRANCH  
(See reverse for responsible personnel)

The following objects HAVE  HAVE NOT  been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.

D-218

JOB NUMBER

10-2-78

SURVEY NUMBER

H-9772

DATUM

1927 N. American Datum

METHOD AND DATE OF LOCATION  
(See instructions on reverse side)

OFFICE

FIELD

CHARTS  
AFFECTED

CHARTING  
NAME

DESCRIPTION  
(Record reason for deletion of landmark or aid to navigation.  
Show triangulation station names, where applicable, in parentheses.)

LATITUDE

D.M. Meters

LONGITUDE

D.P. Meters

TANK

Manor Park Water Tank

40° 12'

74° 46'

.21

F-V-Vis-8-~

10-12-78

12314

DOME

Trenton State Capital Dome 1933

40° 13'

74° 46'

.8521

F-V-Vis-8

10-12-78

"

TANK

Stauffer Tank

40° 11'

74° 45'

.47

F-V-Vis-8-3

10-12-78

"

BLDG

Trenton Brewery Bldg.

40° 11'

74° 45'

.88

F-V-Vis

10-12-78

"

TOWER

West Transmission Tower

40° 10'

74° 45'

.98

F-V-Vis-8-6-3

10-12-78

"

TOWER

East Transmission Tower

40° 11'

74° 44'

.06

F-V-Vis-8-6-3

10-12-78

"

STACK

Duck Island North Stack

40° 10'

74° 44'

.72

F-V-Vis-8-6-3

10-13-78

"

STACK

Duck Island South Stack

40° 10'

74° 44'

.70

F-V-Vis-8-6-3

10-13-78

"

TANK

Boardtown Muni Water Tank (Ocean Spray  
written on side)

40° 09'

74° 42'

.22

F-V-Vis-6

10-16-78

"

STANDPIPE

Boardtown Standpipe

40° 08'

74° 42'

.78

F-V-Vis-8

10-16-78

"

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	Jon Daniel (HFP-3)
POSITIONS DETERMINED AND/OR VERIFIED	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	
	ORIGINATOR
	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEOGETIC PARTY <input type="checkbox"/> OTHER (Specify)
	FIELD ACTIVITY REPRESENTATIVE
	OFFICE ACTIVITY REPRESENTATIVE
	<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'  
 (Consult Photogrammetric Instructions No. 64.)

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.

EXAMPLE: 75E(C)6042  
8-12-75

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

- F - Field
- L - Located
- V - Visually
- 1 - Triangulation
- 2 - Traverse
- 3 - Intersection
- 4 - Resection
- 5 - Field identified
- 6 - Theodolite
- 7 - Planetable
- 8 - Sextant

A. Field positions\* require entry of method of location and date of field work.

EXAMPLE: F-2-6-L  
8-12-75

\*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions\*\* require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.

EXAMPLE: P-8-V  
8-12-75  
74L(C)2982

II. TRIANGULATION STATION RECOVERED

When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.

EXAMPLE: Triang. Rec.  
8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.  
8-12-75

\*\*PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

NOAA FORM 76-40  
(8-74)

Replaces C&GS Form 567.

**NONFLOATING AIDS OR LANDMARKS FOR CHARTS**

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

**ORIGINATING ACTIVITY**

- HYDROGRAPHIC PARTY
- GEODETIC PARTY
- PHOTO FIELD PARTY
- COMPILATION ACTIVITY
- FINAL REVIEWER
- QUALITY CONTROL & REVIEW GRP.
- COAST PILOT BRANCH

(See reverse for responsible personnel)

REPORTING UNIT  
(If field party, ship or office)

HFP-3

LOCALITY

Delaware R.

DATE

10/30/78

STATE

Penn. & N.J.

The following objects HAVE  HAVE NOT  been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.

D-218

JOB NUMBER

10-2-78

DATUM

1929 North American Datum

SURVEY NUMBER

H-9772

SURVEY NUMBER

H-9787

CHARTING NAME

DESCRIPTION  
(Record reason for deletion of landmark or aid to navigation.  
Show triangulation station names, where applicable, in parentheses)

LATITUDE

LONGITUDE

METHOD AND DATE OF LOCATION  
(See instructions on reverse side)

CHARTS AFFECTED

BELFREY

Manual Training Sch Belfrey

40° 08'

74° 43'

F-V-Vis-8-3  
10-18-78

12314

TANK

Fieldsboro Tank

40° 08'

74° 43'

F-V-Vis-8  
10-18-78

"

TANK

Stepan Chemical Co. Tank

40° 08'

74° 44'

F-V-Vis-8-3  
10-18-78

"

STACK

Southerly of Nine

40° 09'

74° 45'

F-V-Vis-8  
10-18-78

"

STACK

northerly of twin

40° 08'

74° 45'

F-V-Vis-8-3  
10-18-78

"

STACK

southerly of twin

40° 08'

74° 45'

F-V-Vis-8-3  
10-18-78

"

STACK

south of four

40° 08'

74° 45'

F-V-Vis-8-3  
10-18-78

"

TANK

Roebling Lettered Water Tank

40° 07'

74° 46'

F-V-Vis-8-3  
10-18-78

"

TANK

Roebling Unlettered Water Tank

40° 07'

74° 46'

F-V-Vis-8  
10-18-78

"

STACK

Abandoned Plant Stack

40° 08'

74° 48'

F-V-Vis-6  
10-18-78

"

RESPONSIBLE PERSONNEL		ORIGINATOR
TYPE OF ACTION	NAME	
OBJECTS INSPECTED FROM SEAWARD	Jon Daniel (HFP-3)	
POSITIONS DETERMINED AND/OR VERIFIED	FIELD ACTIVITY REPRESENTATIVE	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	OFFICE ACTIVITY REPRESENTATIVE	

- PHOTO FIELD PARTY
- HYDROGRAPHIC PARTY
- GEODETIC PARTY
- OTHER (Specify)

- REVIEWER
- QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'  
(Consult Photogrammetric Instructions No. 64.)

<p><b>OFFICE</b></p> <p><b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75</p> <p><b>FIELD</b></p> <p><b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p><b>FIELD (Cont'd)</b></p> <p><b>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.</b> EXAMPLE: P-8-V 8-12-75 74L(C)2982</p> <p><b>II. TRIANGULATION STATION RECOVERED</b> When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75</p> <p><b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>
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NOAA FORM 76-40  
(6-74)

Replaces C&GS Form 567.

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

ORIGINATING ACTIVITY

- HYDROGRAPHIC PARTY
- GEODETIC PARTY
- PHOTO FIELD PARTY
- COMPILATION ACTIVITY
- FINAL REVIEWER
- QUALITY CONTROL & REVIEW GRP.
- COAST PILOT BRANCH

(See reverse for responsible personnel)

REPORTING UNIT  
(Field Party, Ship or Office)

HFP3

LOCALITY

Delaware R.

DATE

10/30/78

STATE

Penn. & N.J.

DATUM

1927 North American Datum

OPR PROJECT NO.

D-218

JOB NUMBER

10-2-78  
10-3-78

SURVEY NUMBER

H-9772  
H-9787

DESCRIPTION

(Record reason for deletion of landmark or aid to navigation.  
Show triangulation station names, where applicable, in parentheses.)

HAVE NOT  HAVE  been inspected from seaward to determine their value as landmarks.

CHARTING NAME	DESCRIPTION	LATITUDE		LONGITUDE		METHOD AND DATE OF LOCATION (See instructions on reverse side)	CHARTS AFFECTED		
		°	'	°	'			OFFICE	FIELD
TANK	Bristol Works Tank	40° 07'	.98	74° 49'	.14	F-V-Vis-6 10-16-78	12314		
STACK	P.P.P. Co. Water Tank	40° 07'	.89	74° 49'	.70	F-V-Vis-6 10-16-78	"		
TANK	E.P.P. Co. Stack	40° 07'	.83	74° 49'	.79	F-V-Vis-6-10 10-16-78	1		
SPIRE	Roebling Assumption Ch. Spire	40° 06'	.93	74° 47'	.12	F-V-Vis-6-8 10-16-78	"		
STANDPIPE	Florence Standpipe	40° 06'	.95	74° 47'	.69	F-V-Vis-6-8 10-16-78	"		
SPIRE	Bordentown spire	40° 08'	.81	74° 42'	.87	F-V-Vis-6 10-16-78	"		
BELFRY	Bordentown belfry	40° 08'	.80	74° 42'	.83	F-V-Vis 10-28-78	"		
CRANE RAMP	Crane Ramp (N.W. Corner)	40° 07'	.37	74° 49'	.03	F-V-Vis-6 10-13-78	"		
FLAGPOLE	Flag pole in Edgely	40° 07'	.61	74° 49'	.64	F-V-Vis	"		
TOWER	Delaware River Bridge Tower	40° 07'	.00	74° 49'	.78	F-V-Vis	"		

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	Jon Daniel (HFP-3)
POSITIONS DETERMINED AND/OR VERIFIED	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	

**ORIGINATOR**

- PHOTO FIELD PARTY  
 HYDROGRAPHIC PARTY  
 GEODETTIC PARTY  
 OTHER (Specify)

FIELD ACTIVITY REPRESENTATIVE

OFFICE ACTIVITY REPRESENTATIVE

REVIEWER

QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

**INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'**  
 (Consult Photogrammetric Instructions No. 64.)

**OFFICE**

**I. OFFICE IDENTIFIED AND LOCATED OBJECTS**

Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.

EXAMPLE: 75E(C)6042  
8-12-75

**FIELD**

**I. NEW POSITION DETERMINED OR VERIFIED**

Enter the applicable data by symbols as follows:

- |                   |                      |
|-------------------|----------------------|
| F - Field         | P - Photogrammetric  |
| L - Located       | Vis - Visually       |
| V - Verified      |                      |
| 1 - Triangulation | 5 - Field identified |
| 2 - Traverse      | 6 - Theodolite       |
| 3 - Intersection  | 7 - Planetable       |
| 4 - Resection     | 8 - Sextant          |

A. Field positions\* require entry of method of location and date of field work.

EXAMPLE: F-2-6-L  
8-12-75

\*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

**FIELD (Cont'd)**

**B. Photogrammetric field positions\*\* require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.**

EXAMPLE: P-8-V  
8-12-75  
74L(C)2982

**II. TRIANGULATION STATION RECOVERED**

When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.

EXAMPLE: Triang. Rec.  
8-12-75

**III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH**

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.  
8-12-75

\*\*PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

NOAA FORM 76-40  
(8-74)

Replaces C&GS Form 567.

### NONFLOATING AIDS OR LANDMARKS FOR CHARTS

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

ORIGINATING ACTIVITY

- HYDROGRAPHIC PARTY
- GEODETIC PARTY
- PHOTO FIELD PARTY
- COMPILATION ACTIVITY
- FINAL REVIEWER
- QUALITY CONTROL & REVIEW GRP.
- COAST PILOT BRANCH

(See reverse for responsible personnel)

DATE  
10-30-78

LOCALITY  
Delaware R.

STATE  
Penn. & N.J.

REPORTING UNIT  
(Field Party, Ship or Office)  
HFP-3

The following objects HAVE  been inspected from seaward to determine their value as landmarks.

METHOD AND DATE OF LOCATION  
(See instructions on reverse side)

DATUM  
1927 N. American Datum

SURVEY NUMBER  
H-9772

JOB NUMBER  
10-2-78

OFFICE

POSITION

LATITUDE

DESCRIPTION  
(Record reason for defation of landmark or aid to navigation.  
Show triangulation station name, where applicable, in parentheses.)

JOB NUMBER  
10-3-78

FIELD

LONGITUDE

D.M. Meters

UNITED, VALVE, STEPAN PENNSBURY MANOR BOAT HOUSE (WHITE)

CHARTING NAME  
HOUSE

OFFICE

LONGITUDE

D.M. Meters

FIELD

LONGITUDE

D.M. Meters

FIELD

LONGITUDE

D.M. Meters

FIELD

LONGITUDE

D.M. Meters

FIELD

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D.M. Meters

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D.M. Meters

FIELD

LONGITUDE

D.M. Meters

FIELD

LONGITUDE

D.M. Meters



RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	Jon Daniel (HFP-3)
POSITIONS DETERMINED AND/OR VERIFIED	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	
<p>INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'            (Consult Photogrammetric Instructions No. 64.)</p>	
<p><b>OFFICE</b></p> <p>I. OFFICE IDENTIFIED AND LOCATED OBJECTS            Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.            EXAMPLE: 75E(C)6042            8-12-75.</p>	<p><b>FIELD (Cont'd)</b></p> <p>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.            EXAMPLE: P-8-V            8-12-75            74L(C)2982</p> <p>II. TRIANGULATION STATION RECOVERED            When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.            EXAMPLE: Triang. Rec. 8-12-75</p> <p>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH            Enter 'V-Vis.' and date.            EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>
<p><b>FIELD</b></p> <p>I. NEW POSITION DETERMINED OR VERIFIED            Enter the applicable data by symbols as follows:            F - Field            L - Located            V - Visually            1 - Triangulation            2 - Traverse            3 - Intersection            4 - Resection            5 - Field identified            6 - Theodolite            7 - Planetable            8 - Sextant</p> <p>A. Field positions* require entry of method of location and date of field work.            EXAMPLE: F-2-6-L            8-12-75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	

NOAA FORM 76-40  
(6-74)

Replaces C&GS Form 567.

**NONFLOATING AIDS OR LANDMARKS FOR CHARTS**

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

**ORIGINATING ACTIVITY**

- HYDROGRAPHIC PARTY
  - GEODETIC PARTY
  - PHOTO FIELD PARTY
  - COMPILATION ACTIVITY
  - FINAL REVIEWER
  - QUALITY CONTROL & REVIEW GRP.
  - COAST PILOT BRANCH
- (See reverse for responsible personnel)

REPORTING UNIT  
(Field Party, Ship or Office)

HFP-3

LOCALITY

Delaware R.

DATE

10/30/78

STATE

Penn. & N.J.

The following objects HAVE  BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

CHARTING NAME	JOB NUMBER	SURVEY NUMBER	D.A.T.U.M.	POSITION		LONGITUDE	METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
				LATITUDE	LONGITUDE		OFFICE	FIELD	
STACK	10-2-78 10-3-78	H-9772 H-9787	1927 N. American Datum	40° 12'	74° 46'	.56		10-12-78	SEE L-1143/83 12314
TANK				40° 12'	74° 46'	.63			"
TANK				40° 12'	74° 46'	.60		10-12-78	"
STACK				40° 12'	74° 46'	.57		10-12-78	"
DOME				40° 12'	74° 45'	.68		10-12-78	"
HOUSE				40° 09'	74° 43'	.50'		10-13-78	"
HOUSE				40° 09'	74° 42'	.60 49		10-13-78	"
TANK				40° 09'	74° 42'	.45		10-13-78	"
				40°	74°				
				40°	74°				

~~10-886~~ L-1143(83)

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	Jon Daniel (HFP-3)
POSITIONS DETERMINED AND/OR VERIFIED	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	
<p align="center"><b>INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'</b> (Consult Photogrammetric Instructions No. 64.)</p>	
<p><b>OFFICE</b></p> <p><b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75</p> <p><b>FIELD</b></p> <p><b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified P - Photogrammetric Vis - Visually 5 - Field identified 6 - Theodolite 7 - Intersection 8 - Resection</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p><b>FIELD (Cont'd)</b></p> <p><b>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.</b> EXAMPLE: P-8-V 8-12-75 74L(C)2982</p> <p><b>II. TRIANGULATION STATION RECOVERED</b> When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75</p> <p><b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>

VELOCITY TAPG

OPR D 218

HSR 10-2-78

H-9772

UESNO 1286 & 1283

TABLE #1

000085 0 0000 0001 000 128600 009772  
000218 0 0002  
000350 0 0004  
000421 0 0006  
000457 0 0008  
000473 0 0010  
000600 0 0012  
999999 0 0000

TABLE #2

000099 0 0000 0002 000 128300 009772  
000497 0 0002  
000545 0 0004  
000600 0 0006  
999999 0 0000

FIELD TIDE NOTE

Predicted tides were used to reduce all soundings north of latitude 40°11'2N. Predicted tides were not useable south of 40°11'2N., even though the times and heights of predicted high and low water were found to be quite good. Predicted tides were not used because the tidal curve which occurs in a river such as the Delaware does not closely follow the sine curve used by our Predicted Tide Generator program (AM-500).

Soundings in the creek behind Newbold Island were reduced using data from the Kinkora bubbler tide station #853-9388. All other tide correctors for this sheet were derived from daily readings at the Fieldsboro ADR tide station #853-9487. The tide record was read at 30 minute intervals for the period of hydrography, later interpolated to 15 minute intervals and reduced to a chart datum of 2.4 feet on the Fieldsboro staff. This datum was later determined to be 0.7 feet above MLW. According to data obtained from Rovkville Tides Branch, C331, bench mark (9487-A) is 15.57 feet above MLW. According to levels run by HFP-3, this bench mark is 17.254 feet above 0 on the staff presently installed at this station, upon which chart datum is based. Therefore, the chart datum is 0.7 feet above MLW for all data south of latitude 40°11'2.

Observers of gages not installed by HFP-3 were contacted as per project instructions. All gages installed by HFP-3 were set and maintained at GMT. Tide gages were installed and operated at the following locations during the periods indicated.

<u>SITE</u>	<u>LOCATION</u>	<u>PERIOD</u>
Fieldsboro 853-9487	lat. 40°08'.2 long. 74°44'.3	leveled in July 7, 78. staff knocked down August 17, 78, re- installed and re-leveled Aug. 18, 78. leveled out Oct. 21, 78, removed Nov. 1, 78
Kinkora 853-9388	lat. 40°07'.3 long. 74°45'.1	Aug. 21 to Aug. 31, 78 leveled in Aug. 24, 78
Meenan 854-9424	lat. 40°07'.7 long. 74°49'.36	leveled in July 24, 78. operated July 27 to Nov. 1, 78. leveled out Oct. 21, 78
Burlington 853-9094	lat. 40°04'.8 long. 74°52'.5	leveled in July 20, 78. operated July 27 to Nov. 1, 78. leveled out Oct. 21, 78

April 23, 1979

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12):  
853-9993 Trenton, New Jersey  
853-9487 Fieldsboro, New Jersey  
853-9388 Kinkora, New Jersey  
854-9424 Meenan, Pennsylvania

Period: July 5 - October 24, 1978

HYDROGRAPHIC SHEET: H-9772

OPR: D2198

Locality: Delaware River, Pennsylvania- New Jersey

Plane of reference (mean ~~lower~~ low water):  
1.48 ft. - Trenton 3.85 ft. - Meenan  
3.10 ft. - Fieldsboro  
0.4 ft. - Kinkora

Height of Mean High Water above Plane of Reference is

8.2 ft. - Trenton; 8.0 ft. - Fieldsboro; 7.9 ft. - Kinkora; 7.7 ft. Meenan

Remarks: Recommended Zoning:

1. North of 40°10' zone direct on Trenton.
2. South of 40°10' and west to 74°47' zone direct on Fieldsboro.
3. West of 74°47' zone direct on Meenan.
4. In Newbold Creek zone direct on Kinkora.

*James R. Hubbard*  
Chief, Datums and Information Branch

GEOGRAPHIC NAMES

H-9772

Name on Survey

A ON CHART NO. 12314  
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

Name on Survey	A	B	C	D	E	F	G	H	K
Biles Creek	X								1
<del>Blacks Creek</del>	X								
Biles Island	X								2
Biles Point	X								3
Bordentown	X								4
Crosswicks Creek	X								5
<del>Delaware</del>	X								6
Delaware River (Title)	X								7
Duck Creek	X								8
Duck Island	X								9
Echo Point	X								10
Fieldsboro	X								11
Florence <del>Light</del>	X								12
Kinkora	X								13
Kinkora Bar	X								14
Money Island	X								15
Moon Island	X								16
Morrisville <del>Island</del>	X								17
Newbold Island	X								18
<del>New Jersey</del>	X								19
Pennsbury Manor State Park	X								20
<del>Pennsylvania</del>	X								21
Roebing	X								22
Starkeys Island	X								23
Starveout Island	X								24
Sucker Point	X								25
Trenton	X								

Approved:

*Chas. E. Harrington*  
Chief Geographer - W/262x5

17 Feb. 1983

## HYDROGRAPHIC SURVEY STATISTICS

H-9772

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	8 / 4 parts
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. <sup>1</sup> / <sub>2</sub> ARC, EXCESS <sup>2</sup>	3

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1		1 Raw Plo & Fatho			
VOLUMES	X					
BOXES			1 - Smooth Pos's Sound Plo, 6 Sound Vol. Lead Mic.			

T-SHEET PRINTS (List) TP-00235, TP-00236, TP-00237

SPECIAL REPORTS (List)

## OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			1342
POSITIONS CHECKED		1342	1342
POSITIONS REVISED		50	50
SOUNDINGS REVISED		250	250
SOUNDINGS ERRONEOUSLY SPACED		150	150
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	0
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	2		2
VERIFICATION OF CONTROL		8	8
VERIFICATION OF POSITIONS		20	20
VERIFICATION OF SOUNDINGS		257	257
COMPILATION OF SMOOTH SHEET		222	222
APPLICATION OF TOPOGRAPHY		50	50
APPLICATION OF PHOTOBATHYMETRY		0	0
JUNCTIONS		2	2
COMPARISON WITH PRIOR SURVEYS & CHARTS		33	33
VERIFIER'S REPORT		20	20
OTHER		50	50
<b>TOTALS</b>	<b>2</b>	<b>666</b>	<b>668</b>
Pre-Verification by P. Niland	Beginning Date 3/8/79	Ending Date 3/8/79	
Verification by R. Keene, C. Meekins, F. Saunders, R. Rebers	Beginning Date 4/13/79	Ending Date 12/24/80 11/9/81	
Verification Check by R.D. Sanocki	Time (Hours) 14	Date 12/11/81	
Marine Center Inspection by HIT	Time (Hours) 40	Date 12/14/81	
Quality Control Inspection by J. Baumgardner	Time (Hours) 135	Date 9/9/82	
Requirements Evaluation by RW Derkazavian	Time (Hours) 4	Date 9/8/83	

A. Myers 2/4/83 22 hours



REGISTRY NO. 9772

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE \_\_\_\_\_ TIME REQUIRED \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

ATLANTIC MARINE CENTER  
VERIFICATION REPORT

REGISTRY NO.: H-9772

FIELD NO.: HSB-10-2-78

Pennsylvania and New Jersey, Delaware River, ~~Reebing to Trenton~~ To Florence

SURVEYED: July 5 through October 7, 1978

SCALE: 1:10,000

PROJECT NO.: OPR-D218-HFP-78

SOUNDINGS: Raytheon DE-719B  
Survey Fathometer

CONTROL: Del Norte (Range-  
Range)  
Del Norte/Theodolite  
(Range/Azimuth)

Chief of Party .....	T. W. Richards
Surveyed by .....	M. J. Bradley
.....	S. R. Iwamoto
.....	R. Snow
.....	J. Daniel
.....	L. Gilden
.....	C. Gorski
.....	J. Oswald
.....	D. Elliot
.....	R. Jones
Automated Plot by .....	Xynetics 1201 Plotter (AMC)
Verified and Inked by .....	F. L. Saunders

1. Introduction

- a. No unusual problems were encountered during verification.
- b. Notes in the Descriptive Report were made in red during verification.

2. Control and Shoreline

a. Control is adequately discussed in sections F and G of the Descriptive Report. This discussion is supplemented by the "Control Report, 1978 Traverse, Delaware River". This report will be included with the survey records. (report not submitted with records)

b. Shoreline originates with Class III, reviewed, photogrammetric manuscripts TP-00234 thru 00236 of 1975-78. The manuscripts were not field edited.

c. The obstruction located on TP-00236, in latitude 40°08'26"N, longitude 74°44'12"W, has been discredited by the present survey.

3. Hydrography

- a. Depths at crossings are in good agreement.
- b. The standard depth curves could be adequately delineated, except in some inshore areas where steep slopes preclude the delineation of the 0- and 6-foot depth curves. Portions of the 3-foot supplemental curve and a brown curve were added to more adequately define the bottom configuration.

c. The development of the bottom configuration and determination of least depths is considered adequate.

#### 4. Condition of Survey

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual with the following exceptions:

a. Bar checks were not taken as per section 1.5.2 of the Hydrographic Manual.

b. In section N, Aids to Navigation, the hydrographer stated, "All Aids to Navigation observed during the course of this survey are included in the 1978 Light List". Florence Bend Channel Lighted Buoy 65 was not located by the hydrographer. No mention was made in any case. The hydrographer should have addressed this deficiency in section L, Comparison with Chart or section N, Aids to Navigation.

~~c. The hydrographer failed to locate the fixed aids to navigation that were not located by Photo Party 61.~~

#### 5. Junctions

H-9787 (1978) to the west.

An adequate junction was effected with the survey above. There is no junction requirement to the north.

#### 6. Comparison with Prior Surveys

a.	H-146 (1844)	1:10,000
	H-147 (1844)	1:10,000

The above surveys taken together cover the entire survey area; however, they provide no basis for comparison. Too much cultural development has taken place since the prior surveys were completed. The above prior surveys are only useful as historical documents. The present survey is adequate to supersede the prior surveys in the common area.

b.	T-8765 (19 <sup>46</sup> 49)	1:10,000
	T-8766 (19 <sup>46</sup> 49)	1:10,000

The above photogrammetric manuscripts were available for comparison with the present survey. The hydrographer's comments in sections K and L of the Descriptive Report address the discrepancies between the present survey and charted data; however, there are some additions to follow:

1. In the vicinity of Money Island Latitude 40°07'30"N, Longitude 74°47'30"W the shoreline is shown as continuous. The previous shoreline manuscript shows an area of marshy islands.

1a. Two groups of piles located in latitude 40°08'10"N, longitude 74°45'50"W and latitude 40°08'15"N, longitude 74°46'01"W, were brought forward from these prior surveys to supplement the present survey.

2. The jetty located on the southwest end of Newbold Island is shown as "pilings awash" on T-8766. The present survey describes this as "jetty rocks and pilings". ✓

3. A major industrial complex has been developed at approximately Latitude  $40^{\circ}08'20''N$ , Longitude  $74^{\circ}45'20''W$  resulting in a major shoreline change. ✓

4. A large recession and spoil area near Pennsbury Manor are not shown on T-8765. ✓

5. The recession on the north side of Newbold Island Latitude  $40^{\circ}08'00''N$ , Longitude  $74^{\circ}45'00''W$  is a major shoreline change from T-8765. ✓

6. The transmission towers across the river near Biles Island have been rebuilt near their old locations. ✓

7. A new pier facility has been constructed on Duck Island. ✓

8. The concrete wharf shown at Latitude  $40^{\circ}07'56''N$ , Longitude  $74^{\circ}46'05''W$  does not exist. A phone conversation with the Pennsbury Manor found that there is no wharf on the river at Pennsbury Manor. ✓

~~9. A pipe that bares at Mean Low Water (MLW) at Latitude  $40^{\circ}12'25''N$ , Longitude  $74^{\circ}46'09''W$  was brought forward from T-8765 (1949).~~

~~10. The foul area at Latitude  $40^{\circ}11'40''N$ , Longitude  $74^{\circ}45'30''W$  was brought forward from T-8765 (1949).~~

11. The wooden pier at Latitude  $40^{\circ}11'12''N$ , Longitude  $74^{\circ}45'15''W$  on T-8765 (1949) is located on what is shown as fast land on the present survey.

With the addition of the above, the present survey is adequate to supersede these prior surveys within the common area.

7. Comparison with Chart 12314 (22nd Edition, July 30/77)

a. Hydrography

The charted hydrography originates with local notice to mariners and unascertainable sources. A general shoaling trend was noted.

The following discrepancies were noted between the chart and the present survey:

1) Three small charted piers in the vicinity of Latitude  $40^{\circ}11'53''N$ , Longitude  $74^{\circ}45'30''W$  <sup>are considered discredited</sup> were not found or disproved by this survey. ~~Retention unless subsequent investigation is to the contrary.~~ <sup>chart present survey information</sup> ✓

2) Two boat ramps and floating piers in the vicinity of Latitude  $40^{\circ}11'05''N$ , Longitude  $74^{\circ}45'05''W$  were located on the survey. Recommend charting of these features.

3) Mooring pilings, a floating pier, and boat ramp were located at approximately Latitude  $40^{\circ}10'50''N$ , Longitude  $74^{\circ}44'22''W$ . Recommended charting of these features.

latitude  $40^{\circ}10'47''$ N, longitude  $74^{\circ}44'14''$ W.

- 4) The charted pier, approximately 170 meters down stream of the previous item was neither found nor disproved by the survey. Recommend it remain as charted. *charted as ruins on 1982 edition of chart* ✓
- 5) The charted pier at approximately Latitude  $40^{\circ}10'09''$ N, Longitude  $74^{\circ}43'57''$ W was neither proved nor disproved by the survey. Recommend the feature remain as charted. ✓
- 6) The uncharted barge ruins located at Latitude  $40^{\circ}09'54''$ N, Longitude  $74^{\circ}43'22''$ W was located by the hydrographer and should be applied to the chart. *shown as stranded wreck on smooth sheet* ✓
- 7) The uncharted ramp at Latitude  $40^{\circ}08'53''$ N, Longitude  $74^{\circ}43'07''$ W was located on the survey and should be charted. ✓
- 8) The uncharted ramp at Latitude  $40^{\circ}08'12''$ N, Longitude  $74^{\circ}44'54''$ W was located on the survey and should be charted. ✓
- 9) The charted shoreline configuration at Latitude  $40^{\circ}08'15''$ N, Longitude  $74^{\circ}45'08''$ W and Latitude  $40^{\circ}07'55''$ N, Longitude  $74^{\circ}46'05''$ W varies from the portrayal on present survey and should be revised to show the most recent configuration. ✓
- 10) <sup>20</sup> The charted pier and four pilings at Latitude  $40^{\circ}07'21''$ N, Longitude  $74^{\circ}48'31''$ W <sup>are</sup> shown as a pier and ramp on the present survey and an additional pier was located approximately 90 meters upstream from this location. A telephone conversation with Mr. Lou Ames (609) 499-0730 of Florence, New Jersey provide additional information about this area. The new pier and its pilings are removed every winter and replaced in the spring. The four charted pilings were not in the area according to Mr. Ames; however, there are wharf } *retain as submerged* ruins along the shoreline. Recommend charting of the existing features and the additional pier. The four <sup>new</sup> pilings, if charted, should be charted as submerged. ✓
- 11) The following discrepancies were noted between charted depths and the survey depths: ✓

Charted Depth	Location	Survey Depth
8	$40^{\circ}08'58''$ N, $74^{\circ}43'13''$ W	4
5	$40^{\circ}08'57''$ N, $74^{\circ}43'05''$ W	2
<del>15</del>	<del><math>40^{\circ}09'25''</math>N, <math>74^{\circ}43'15''</math>W</del>	<del>8</del>
<del>20</del>	<del><math>40^{\circ}09'25''</math>N, <math>74^{\circ}43'15''</math>W</del>	<del>15</del>
6	$40^{\circ}09'55''$ N, $74^{\circ}43'30''$ W	15
<del>3</del>	<del><math>40^{\circ}10'36''</math>N, <math>74^{\circ}43'36''</math>W</del>	<del>8</del>

12) Another discrepancy exists near the ore loading facility of Duck Island. The deep water has shoaled and narrowed. The charted 35 foot sounding is in the area of ~~20~~<sup>25</sup> foot soundings on the present survey. (latitude 40°10'45"N, longitude 74°44'15"W)

The present survey, except as noted above, is adequate to supersede the charted hydrography in the common area.

13) This <sup>rec</sup> charted ruins <sup>in the vicinity of</sup> at Latitude 40°11'18"<sup>0</sup>N, Longitude 74°45'18"<sup>3</sup>W probably originates with T 8765 (1949) but now falls on fast land. It is recommended that this ruin be deleted from the chart, are considered discredited by the present survey chart present survey information.

b. Controlling Depths SEE Q.C. report

~~The following tabulation shows the differences in controlling depths for the dredged channels in the survey area.~~

<del>Channel</del>	<del>Depth from Tabulation</del>	<del>Survey Depth</del>
<del>Trenton (Upper)</del>	<del>7.9</del>	<del>4</del>
<del>Trenton (Lower)</del>	<del>11.0</del>	<del>9</del>
<del>Moon</del>	<del>13.5</del>	<del>10</del>
<del>Cochran</del>	<del>17.8</del>	<del>5</del>
<del>Duck Island</del>	<del>15.5</del>	<del>13</del>
<del>Whitehill</del>	<del>22.2</del>	<del>21</del>
<del>Newbold</del>	<del>15.5</del>	<del>14</del>

~~Dredged channels not mentioned are in agreement with the tabulation.~~

c. Aids to Navigation

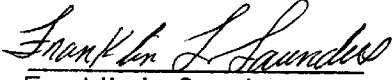
Aids to Navigation are adequately discussed in section N of the Descriptive Report except as noted in sections 4 b and c of this report.

8. Compliance with Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

This is an adequate basic survey and no additional field work is recommended.



Franklin L. Saunders  
Cartographic Technician  
Verification of Data



Robert G. Roberson  
Cartographer  
Evaluation and Analysis  
November 9, 1981

APPROVAL SHEET  
FOR  
SURVEY H-9772

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not been made~~. A new final sounding printout has/~~has not been made~~.<sup>isset</sup>
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the HYDROGRAPHIC MANUAL. Exceptions are listed in the Verification Report.
- Date: Dec 1981

R. W. Smith  
Chief, Verification Branch



INSPECTION REPORT  
H-9772

The completed survey has been inspected by the Hydrographic Inspection Team with regard to survey coverage, delineation of depth contours, development of critical depths, cartographic symbolization and verification or disproof of charted data. The Verification Report has presented the facts accurately and properly, the procedures used were appropriate, and the recommendations are logical and justifiable.

The Hydrographic Inspection Team notes that this survey was conducted at a scale of 1:10000 as specified by the Project Instructions. When consideration is given to the cultural development in the area, the irregularity of the bottom configuration, the width of the river, and the appropriateness of splitting many of the sounding lines run to portray without overgeneralization of many features, a survey scale of 1:5000 would have been more appropriate.

The shoreline presented on this survey does not meet National Ocean Survey requirements. Class III maps were used to transfer nearshore detail and shoreline detail. No Field Edit or Inspection were made on the manuscripts. No revision of the shoreline was made. The HIT expresses little confidence in the shoreline detail and recommends that the shoreline be resurveyed. *Shoreline and foreshore features were adequately verified. No further work is recommended.*

The Hydrographic Inspection Team concurs with the verifier's findings, actions, and recommendations; however, it considers the survey adequate to supersede prior surveys only when consideration is given to the date of the last survey - 1844.

Examined and Approved  
Hydrographic Inspection Team



Karl Wm. Kieninger, CDR, NOAA  
Chief, Processing Division




James C. Gardner, Jr., LTJG, NOAA  
Chief, EDP Branch  
Processing Division



R. D. Sanocki  
Chief, Verification Branch  
Processing Division

Approved/Forwarded  
December 15, 1981



Richard H. Houlder, RADM, NOAA  
Director, Atlantic Marine Center



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SURVEY  
Rockville, Md. 20852

C352:SRB

September 9, 1982

TO: Glen R. Schaefer *RLW for*  
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch *gm*

FROM: *George K. Meyers*  
for S. Baumgardner  
Quality Evaluator

SUBJECT: Quality Control Report for Survey H-9772 (1978), Pennsylvania and New Jersey, Delaware River, Trenton to Florence

A quality control inspection of survey H-9772 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, shoreline transfer, decisions made and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a one-half scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to National Ocean Survey standards and requirements except as stated in the Verifier's Report and the HIT Report.

During quality control, conflicts of as much as 4 feet were found to exist between the present survey and the charted data furnished by the U.S. Army Corps of Engineers in 1977. The 24th edition of chart 12314, dated May 8, 1982, contains information subsequent to the date of the present survey.

A minus 3-foot depth is shown on the present survey in the North Reach of Trenton Channel in latitude 40°12'04.6"N, longitude 74°45'41.3"W. The channel tabulation provided by the U.S. Army Corps of Engineers on Chart 12314, 24th Edition, May 8, 1982, indicates that Trenton Channel was surveyed in June 1981, subsequent to the present survey. At that time, the North Reach was found to have a controlling depth of 9.2 feet in the center half only. It is recommended that the U.S. Army Corps of Engineers be contacted in an attempt to ascertain the present validity of the minus 3-foot depth encroaching into the channel.

cc:  
C351





**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SERVICE  
CHARTING AND GEODETIC SERVICES  
Rockville, Md. 20852

DEC 15 1983

N/CG241:RWD

TO: N/MOA - Wesley V. Hull

FROM: *for* N/CG2 - C. William Hayes *signed R. Peters*

SUBJECT: Report of Compliance for Survey H-9772

The smooth sheet and Descriptive Report for survey H-9772 (1978), Pennsylvania and New Jersey, Delaware River, Trenton to Florence, have been reviewed. This survey, except as noted in the Quality Control Report, dated September 9, 1982 (copy attached), and the Hydrographic Survey Inspection Team Report, dated December 15, 1981, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-D218-HFP-78, dated June 13, 1977.

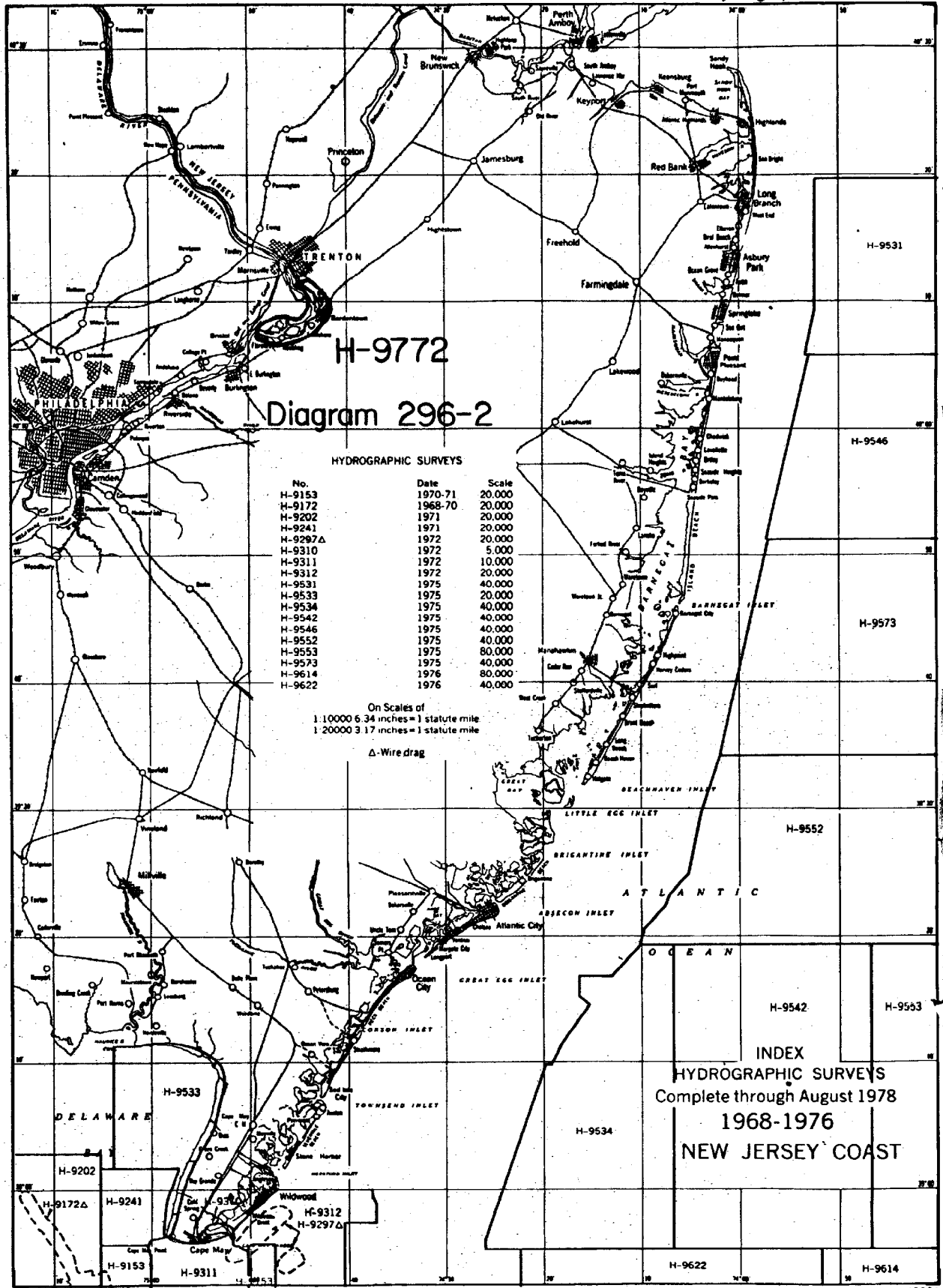
Attachment

cc:  
N/CG242 w/o att.



DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Survey  
Rockville, Maryland

Hydrographic Index No. 66 L



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9772

INSTRUCTIONS

- A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
  2. In "Remarks" column cross out words that do not apply.
  3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
12314	3/7/84	<i>Bill Wankless</i>	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 29
12314	4-11-84	<i>D.C. Harpine</i>	Applied critical corrections Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. 29
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