

10027

10027

Diagram No.295-2

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-10-7-82
Office No. H-10027

LOCALITY

State Penn., New Jersey, Delaware
General Locality Delaware River
Locality Vicinity of Oldmans Point
to Raccoon Island

19 82

CHIEF OF PARTY
LCDR G.W. Jamerson

LIBRARY & ARCHIVES

DATE January 2, 1986

Ch
Ch

12-12

to be submitted to
Director of Operations to CHM

HYDROGRAPHIC TITLE SHEET

H-10027

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-10-7-82

State Pennsylvania, New Jersey, Delaware

General locality Delaware River

Locality Vicinity of Raccoon Island to Oldmans Point to Raccoon Island

Scale 1:10,000 Date of survey 15 June 82 / 23 Sept. 1982

Instructions dated 4 March 82 Project No. OPR-D218-HSB-82

Vessel NOAA Launch # 1283

Chief of party LT. Cdr. George W. Janerson

Surveyed by Robert Snow (AOIC) HFP#3

Soundings taken by echo sounder, ~~and~~ pole Raytheon 719-B Echo Sounder

Graphic record scaled by CFB, DBE, MJM, RS, MCR

Graphic record checked by CFB, DBE, MJM, RS, MCR

Protracted by N/A Automated plot by AMC Xynetics 12001 fieldsheet PDP-8/e

Verification by AMC - Verification Branch

Soundings in ~~feet~~ feet at MLW ~~Mean~~ Mean Lower Low Water

REMARKS: Surveyed by Carl F. Bush, David B. Elliott, Mark J. McMann

Robert Snow, Mike C. Riddel

MSM 4/25/86

All times ^C Coordinated Universal Time

notes in red added during Evaluation and Analysis.

miscellaneous pages have been removed and filed with the survey records.

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10027
HSB-10-7-82

Scale: 1:10,000

Chief of Party: Lt. Cdr. George W. Jamerson

Officer-in-Charge: Mr. Robert Snow (AOIC)

Hydrographic Surveys Branch, Hydrographic Field Party #3

Launch: 1283

A. PROJECT

This survey was accomplished under Project Instructions OPR-D218-HSB-82, dated March 48, 1982, and amended by Change 1 dated April 127, 1982.

B. AREA SURVEYED

The area surveyed was Delaware River from Raccoon Island to Oldmans Point and bounded by the following points: latitude 39°45'N, longitude 75°29'W and latitude 39°49'30"N, longitude 75°22'30"W.

This survey was conducted from June 15, 1982 to ^{September} ~~October~~ 20, 1982 (JD 166 to ~~293~~ ²⁶⁶) inclusive.

C. SOUNDING VESSEL

All soundings obtained on this survey were obtained from NOAA Launch 1283 (EDP #1283). All survey records are annotated with the vessel number 1283.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The following Raytheon fathometer equipment was used during the survey:

JD 166 - 187	Recorder	Model #719B
		S/N 5881
JD 188 - End	Recorder	Model #719B
		S/N 6211

No unusual problems were encountered with this equipment. The fathometer was monitored continuously while sounding and was under constant adjustment to insure that no initial corrections were necessary.

Settlement and squat tests on Launch 1283 were run on September 14, 1982 at Oldmans Creek. The results of these tests are included in the Appendix of this report. Settlement and squat corrections will be applied via the TC/TI tape during plotting of the smooth sheet at the Atlantic Marine Center and were not applied to the field sheets.

Velocity and instrument corrections were determined by bar checks taken twice daily, weather and sea conditions permitting. The length of the line on the bar ~~were~~ ^{was} checked

on JD 165. The results of this inspection showed that no corrections were necessary.

E. SURVEY SHEETS

The field sheets were prepared in the field using a PDP8/e computer and a DP-3 complot plotter. Work sheets, semi-smooth sheets, smooth field sheets, and overlay sheets are included with this survey. Mainscheme hydrography, developments and splits, and junctions soundings in blue are plotted on the smooth field sheets while crosslines, developments and bottom samples, are plotted on overlay sheets. Projection parameter tape listing for the field sheets is included in the Appendix of this report. The final smooth sheet and verification of this survey will be accomplished at the Atlantic Marine Center on the Harris/7 computer and the Xynetics 1201 plotter.

F. CONTROL STATIONS

Control stations used during this survey were either existing geodetic control stations published by National Geodetic Survey (NGS) or were established by Photo Party #61 in 1978 and Hydrographic Surveys Branch Survey Support Party in 1982 to third order or better standards. All stations are referred to the North American 1927 datum. A list of all control stations used during this survey is included in the Appendix of this report.

G. HYDROGRAPHIC POSITION CONTROL

The method used to control this survey was Range/Azimuth. The equipment used to control this survey was Wild T-1, S/N 13017; Del Norte Master #78-199 on JD 166, 168, 169; Master #74-1067 on JD 187; Master #76-162 on JD 188 to JD 266; Del Norte Remote #76-251 on JD 166 to JD 266; Del Norte Trisponder (DMU) #395 on JD 166 to JD 266. No problems were encountered with the equipment that would affect system accuracy.

The control equipment was calibrated twice daily between control stations using distances computed with program RK407. Del Norte corrections were applied by corrector tapes to field sheets and will be applied during smooth plotting at AMC. Baseline calibration was taken with equipment being used on June 14, 1982; July 16, 1982; and August 10, 1982.

H. SHORELINE

Shoreline detail for this survey was obtained from class III photo manuscripts TP-00245, TP-00246 and ~~TP-00248~~ dated August 1985. *NOTE: TP-00245 and TP-00246 were badly distorted.
78 Copies of

Shoreline corrections ~~are~~ necessary at ^{in red were} latitude ^{lat. 39°48'42"N, long 75°24'30"W and} 39°48'20"N, longitude 75°25'20"W where new pier construction has taken place.

Photogrammetric locations of rocks and other salient features from manuscripts were checked by hydrographic range/azimuth means with the following results and recommendations:

Chart the listed features as shown on the smooth sheet

<u>LAT/LON</u>	<u>POSITION</u>	<u>RECOMMANDATIONS</u>
39°45'51. ⁷¹ 828 "N 75°29'08. ⁶² 940 "W	Piles Pos #1123	Chart row of piles
39°46'15. ⁶⁰ 724 "N 75°28'45. ³⁵ 220 "W	File Pos #1126	Chart pile at this position
39°46'17. ⁴⁸ 597 "N 75°28'43. ⁹⁶ 874 "W	File Pos #1127	Chart pile at this position
39°46'36. ¹³ 079 "N 75°28'34. ⁷⁴ 662 "W	Piles Pos #1326	Chart row of piles
39°47'08. ¹⁷ 067 "N 75°28'04. ⁸⁶ 986 "W	Rock Pile Pos #1108	Chart rock pile
39°47'04. ¹ 600 "N 75°28'01. ¹ 690 "W	Rock Pile Pos #1022	Chart rock pile
39°47'10. ¹⁰ 996 "N 75°28'04. ⁰⁵ 130 "W	Rock Pile Pos #1107	Chart rock pile
39°47'16. ²⁶ 159 "N 75°27'59. ⁶⁷ 754 "W	Row of Piles Pos #1105 - 1106	Chart row of piles
39°47'11. ²¹ 163 "N 75°27'55. ²⁶ 308 "W	Rock Pile Pos #1023	Chart rock pile
39°47'23. ⁵⁵ 452 "N 75°27'48. ²² 309 "W	Row of Piles Pos # 1104	Chart row of piles
39°47'31. ⁹⁵ 904 "N 75°27'31. ⁴ 691 "W	Row of Piles Pos # 1026	Chart row of piles
39°48'18. ⁶⁰ 356 "N 75°25'19. ²² 517 "W	Fuel Pier Pos #573,574,575	Chart new pier ext.
39°48'38. ⁶ 802 "N 75°24'42. ⁶ 606 "W	Ice breaker Pos # 581	Chart ice breaker
39°48'39. ⁸ 337 "N 75°24'43. ⁸ 721 "W	Ice breaker Pos # 582	Chart ice breaker
39°48'42.141"N 75°24'33.645"W	Fuel Pier Pos # 589	Chart fuel pier ext
39°46'19. ⁴⁹ 513 "N 75°26'57. ² 035 "W	Rock Pile Pos # 1038	Chart rock pile
39°46'05. ⁶ 891 "N 75°27'11. ¹¹ 245 "W	Piles Pos # 1039	Chart two piles
39°45'59. ³⁰ 311 "N 75°28'01. ^{0.93} 026 "W	Dredge pipe Pos # 1131	Chart off shore end of submerged dredge pipe/marked with two white drums "COE"

I. CROSSLINES

Crosslines constitute 10% of the mainscheme hydrography. Ninety percent of the crossings agree within one foot. No soundings are in disagreement at crossing by more than one foot. The reasons for the disagreement of sounding at cross-line is due to using predicted tides. *See Eval. Rpt., sec. 4. b.*

J. JUNCTIONS

This survey junctions with the following surveys:

H-9964 to the East up river
H-10042 to the southwest down river (in progress)

One hundred per cent (100%) of these junction soundings agree within one foot when compared with the current survey and none of the junction soundings are in disagreement by more than one foot. H-9964 was completed by HFP-3 in October 1981 and is therefore still unverified. Junction soundings plotted on mainscheme of H-10027 in blue are from survey H-9964. Buoys "C1" and "C3" entrance to Raccoon Creek were located by HFP-3 on survey H-9964 in 1981. *See Eval. Rpt., sec. 5.*

The hydrographer recommends that in the junction areas, the soundings from the present survey be charted and that the depth curves supersede the prior survey's soundings.

K. COMPARISON WITH PRIOR SURVEYS

This survey was previously covered by the following surveys:

H-1501~~13~~ (1881), 1:5,000 scale *See Eval. Rpt. sec. 6*
~~H-1490-A (1881), 1:5,000 scale~~
~~H-1490-B (1881), 1:5,000 scale~~

Comparison showed that significant changes have been made due to dredging to maintain the ship channel, strong currents and ice flows have deepened areas near dredged channels.

L. COMPARISON WITH THE CHART

The following presurvey review items were investigated during this survey:

PSR Item #75 was searched for on JD 225 for one hour. The rock was reported in 1932 to be an obstruction, rock by the Corps of Engineers (BP26003). Water clarity at the time of the investigation was clear. A search at latitude 39°46'56.00"N, longitude 75°26'42.00"W, (Position #1671 to 1720), was performed by chain drag on arcs for a 200-meter radius, 60-ft towline with 50-ft chain sweep was used with Launch 1283 and two otter boards.

The hydrographer recommends that the three foot obstruction that is charted be deleted due to the date of the report of obstruction and because there was nothing found by means of a chain sweep in the area. *Do not concur*

See Eval. Rpt. Sec. 7, 4.1

The Corps of Engineers was contacted about this item and they have no record of its existence, or of its removal. This survey was compared as the survey progressed with Chart 12312, 37th Edition, blown up to the scale of the survey. The following changes in the chart were detected:

- Aug. 22, 1981,
1. Charted rocky ledge at latitude $39^{\circ}49'15''$ ³⁶N, longitude $75^{\circ}24'30''$ ³⁰W. This area was found to have a smooth dredged slope with no indication of any rock ledge. The hydrographer recommends that the rocky ledge be deleted in this area. *Outside survey limits, See H-9964*
 2. There is a rocky shoal in the area of Latitude $39^{\circ}46'48''$ N, longitude $75^{\circ}28'11''$ W to latitude $39^{\circ}47'37''$ N, longitude $75^{\circ}27'07''$ W. The hydrographer recommends that a rocky shoal be put on the chart in this area. See Danger Report in Appendix of this report. *Concur*
 3. ^{Two piles} ~~Dolphins~~ charted at latitude $39^{\circ}47'38''$ N, longitude $75^{\circ}24'54''$ W. There are two ^{piles} dolphins charted at this location. ^{from T-8771} Only ^{the easterly} one remains, DP Position #605, examined at low tide. The hydrographer recommends that the ^{pile} dolphin on the down river side of pier ruins be deleted from chart. *concur (Remaining charted pile appears as dolphin on smooth sheet)*
 4. Obstr rep PA₁ at latitude $39^{\circ}48'25''$ ³³N; longitude $75^{\circ}23'00''$ ⁰⁰W mainscheme hydro was run and the area was examined at low water and nothing was found. Hydrographer recommends that obstr be deleted from chart. *Outside survey limits, See H-9964*
 5. ^{ing, PA, in vicinity of} Two Charted ~~sub piles~~ at latitude $39^{\circ}46'43''$ N, longitude $75^{\circ}28'30''$ W should be reduced to one pile D.P. Pos #1327 at latitude $39^{\circ}46'54.191''$ N, longitude $75^{\circ}28'17.788''$ W examined at low tide. *(Source: CL-1686 of 1978) Concur*
 6. ^{from CL-161 of 1967,} Two Charted subm. piles at latitude $39^{\circ}48'00''$ N, longitude $75^{\circ}24'26''$ W was D.P.'d Pos #598 at low tide and all indications show this location as the off shore end of piles. Hydrographer recommends that this new position; latitude $39^{\circ}47'53.008''$ N, longitude $75^{\circ}24'16.351''$ W, be charted as off shore end of piles. *Do not concur. See Eval. Rpt. sec 7.a.3*
 7. Charted subm. pile PA at latitude $39^{\circ}46'10''$ N, longitude $75^{\circ}28'54''$ W. Off shore end of sewer drain pipe with rock and piling extending to shore was DP'd Pos #1125. Hydrographer recommends that subm. pile be deleted and two sewer drain pipes be charted from DP Pos #1124, latitude $39^{\circ}46'09.3127''$ ³¹²⁷N, longitude $75^{\circ}28'49.489''$ ⁴⁸⁹W and DP Pos #1125, latitude $39^{\circ}46'11.762''$ ⁶⁴N, longitude $75^{\circ}28'47.575''$ ⁵⁶W. *concur, chart as shown on present survey. (Source: CL-1686 of 1978)*

M. ADEQUACY OF SURVEY

This survey is complete and adequate to warrant its use to supersede prior surveys for charting in the common areas.

N. AIDS TO NAVIGATION

All floating and fixed aids to navigation in the survey area were located and comparisons between their charted, Light List (Vol. 1, 1982), and surveyed positions and descriptions were made. All aids were found to adequately serve the apparent

purpose for which they were established with the following exception: Buoy C1 at entrance to Oldmans Creek is on wrong side of channel. The USCG District 3 has been notified by telephone. ^{the charted} *concur See Eval. Rpt. sec. 7.b.2.*

Cable and bridge clearances were checked and found to be accurately charted.

O. STATISTICS

Number of positions	2027
Nautical miles of sounding line	130.1
Nautical miles of crossline	18.0
Nautical miles of development	19.2
Total miles of hydrography	167.3
Number of bottom samples	48
Number of bar checks	37
Number of TDC casts	N/A

P. MISCELLANEOUS

Oldmans Creek was surveyed on JD 187 from Position # 388 to Position # 417 by See Field Sheet in conjunction with project instructions, Section 6.5.3, to the head of navigation determined by fixed Conrail Railroad Bridge, with a fixed vertical clearance of one foot. Bridge clearances were checked on JD 257 and were found to be as charted.

Q. RECOMMENDATIONS

See Section H, L, and P for specific recommendations.

R. AUTOMATED DATA PROCESSING

Programs used during field data acquisition and field processing of this survey are as follows:

<u>PROGRAM</u>	<u>DESCRIPTION</u>	<u>VERSION DATE</u>
RK201	Grid, Signal and Lattice Plot	4/18/75
RK212	Visual Station Table Load	4/01/74
RK216	Range-azimuth Non-real time plot	2/05/76
RK330	Reformat and Data Check	5/04/76
RK407	Geodetic Inverse/Direct Computation	9/25/78
AM500	Predicted Tide Generator	11/10/72
AM602	Elinore-line oriented editor	5/20/75

S. Reference to Reports

Descriptive Report H-¹⁰⁰9942, 198²1, 1:10,000
Descriptive Report H-9964, 1981, 1:10,000

Respectfully submitted,

Robert Snow

Robert Snow, NOAA
AOIC, HFP-3



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Atlantic Marine Center
Hydrographic Surveys Branch

October 15, 1982 OA/CAM11:RAL

TO: OA/C322 - Norman E. Banks
THRU: OA/CAM11 - George W. Jamerson *Geo. W. Jamerson*
FROM: AOIC, HFP-3 - Robert Snow *Robert Snow*
SUBJECT: Advance Information - Danger to Navigation - Delaware
 River, New Jersey - Pennsylvania (Chart 12312)

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

The rocky shoal is considered to be a "Danger to Navigation" and is located on contemporary survey H-10027 (HSB-10-7-82) accomplished by HFP-3.





U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Atlantic Marine Center
Hydrographic Surveys Branch

October 15, 1982 OA/CAM11:RAL

TO: Commander
 Third Coast Guard District

THRU: Lt. Cdr. George W. Jamerson *Geo. W. Jamerson*
 Chief, Hydrographic Surveys Branch

FROM: Mr. Robert Snow *Robert Snow*
 Assistant Officer in Charge, HFP-3

SUBJECT: Information pertinent to navigation in the Delaware
 River, NJ, PA (Chart 13231)

The following information is a result of a recent National Ocean Survey hydrographic survey of the Delaware River in the vicinity of Raccoon Island to Oldmans Point, New Jersey (Survey H-10027, HSB-10-7-82).

An uncharted rocky shoal was found in the vicinity of latitude 39°46'48", longitude 75°28'11" to latitude 39°47'37", longitude 75°27'07". Depths of 1-2 feet were discovered along the presently charted 18 foot contour. This feature could be a "Danger" to small craft navigating outside the channel near the shore.

The hydrography on this survey was controlled by "Range/Azimuth" techniques, a Del Norte distance/Wild T-1 angle. Sounding data were obtained by a Raytheon Model 719B fathometer. Leadline soundings were obtained on least depths at various points on the shoal. Soundings on the field sheet have been reduced using predicted tides and are subject to change with the application of smooth tides.

A copy of the section of the field sheet and overlay of the area considered to be a danger to navigation is enclosed. A Chart 12312, 37th Ed. with the danger area indicated is also enclosed.



39 48 00

ADVANCE INFORMATION SUBJECT TO VERIFICATION

H-10027

Scale: 1:10,000

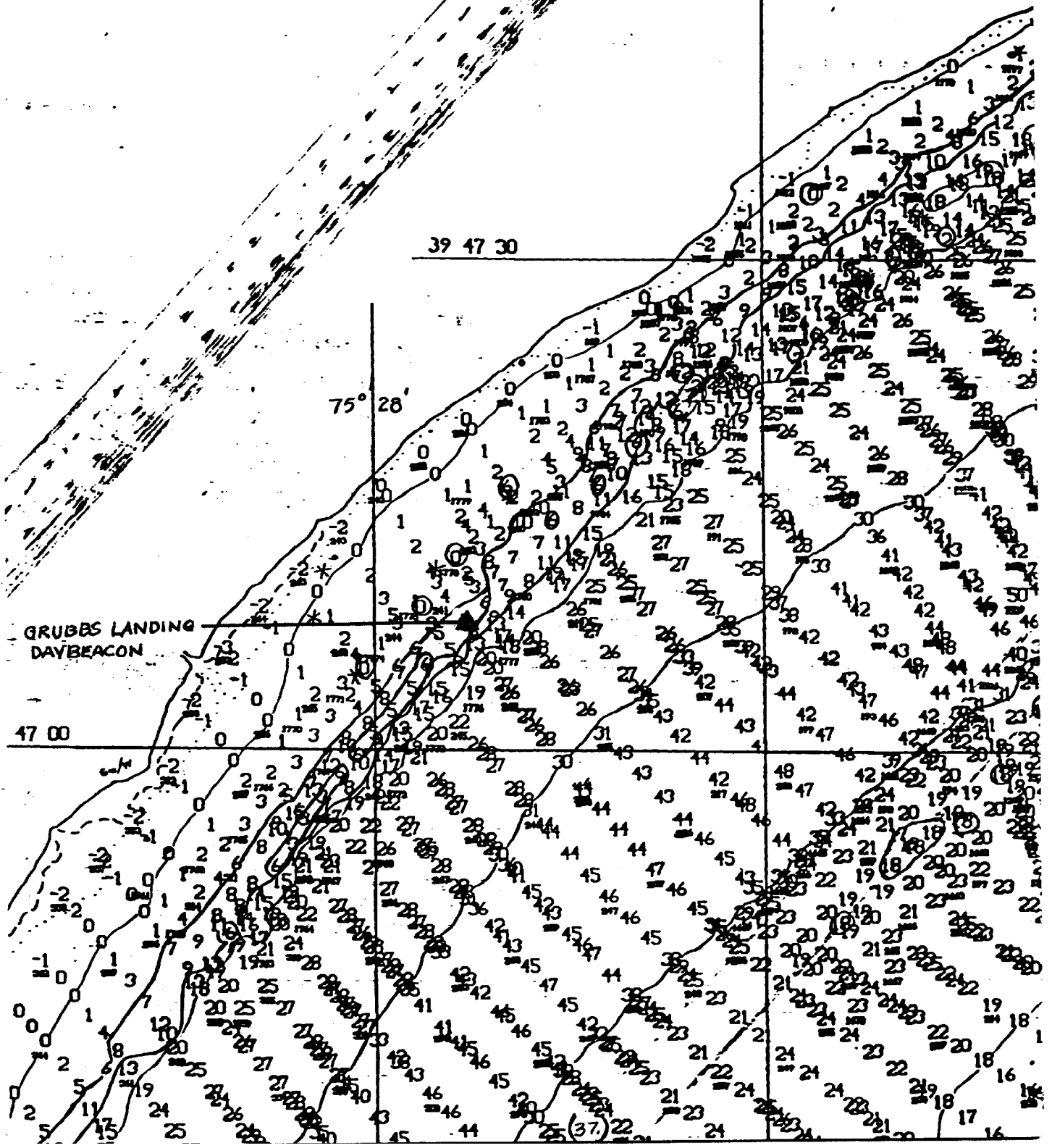
75° 27' 30"

39 47 30

75° 28'

GRUBBS LANDING
DAYBEACON

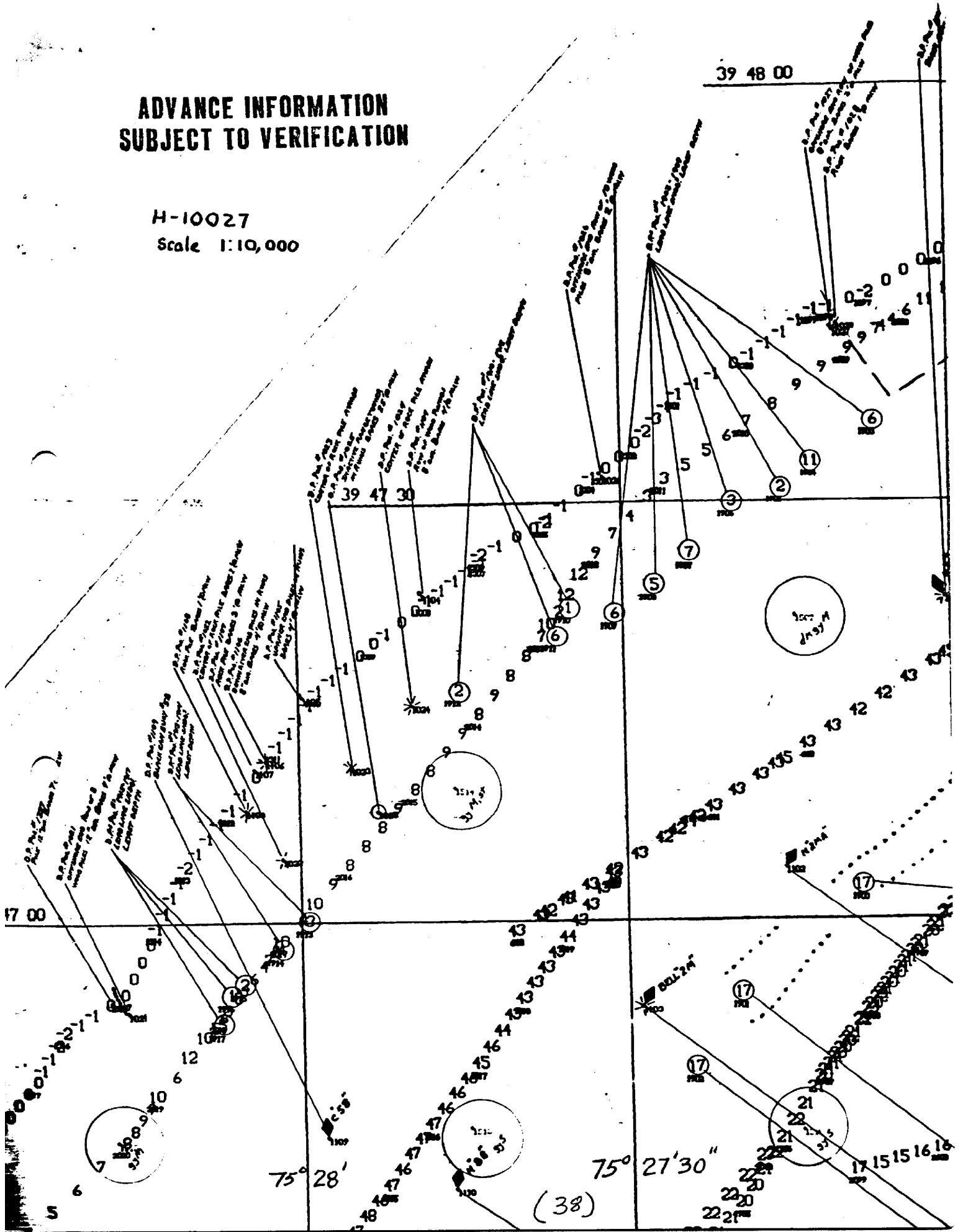
47 00



ADVANCE INFORMATION SUBJECT TO VERIFICATION

H-10027

Scale 1:10,000

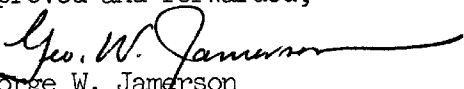


APPROVAL SHEET
SURVEY H-10027 (HSB-10-7-82)

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,


George W. Jamerson
Lt. Cdr. NOAA
Chief, Hydrographic Surveys Branch

SIGNAL TAPE LISTING

DELAWARE RIVER , N.J. 1982

OPR-D218

HSB-10-7-82

H-10027

SHEET "G"

✓ 101	0	39	49	31078	✓ 075	23	05880	✓ 250	0005	000000	61-27-N.J.	1978
✓ 102	7	39	48	04575	✓ 075	24	14240	✓ 250	0003	000000	61-28-N.J.	1978
103	1	39	48	04713	✓ 075	26	01109	✓ 250	0003	000000	61-29-N.J.	1978
104	3	39	46	33169	✓ 075	28	32677	✓ 250	0024	000000	MARCUS HOOK RING FT. LT.	1978
105	3	39	45	01163	✓ 075	29	38020	✓ 250	0003	000000	MOOR USE	1932 **

101-104 ESTABLISHED BY A.Y. BRYSON PHOTO PARTY #61 IN 1978

105 * ESTABLISHED BY U.S.E. IN 1932

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION									
NONFLOATING AIDS FOR DELETION FOR CHARTS									
NDA FORM 76-40 (8-74) Replaces C&GS Form 567.		REPORTING UNIT (Field Party, Ship or Office) HSB-HFP3		STATE Delaware New Jersey		LOCALITY Delaware River		DATE 10/20/82	
TO BE CHARTED <input checked="" type="checkbox"/>		TO BE REVISED <input type="checkbox"/>		TO BE DELETED <input type="checkbox"/>		The following objects HAVE <input checked="" type="checkbox"/> BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.			
OPR PROJECT NO. D218		JOB NUMBER H-10027		SURVEY NUMBER H-10027		DATUM North American 1927			
CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)	LATITUDE		LONGITUDE		OFFICE	FIELD	METHOD AND DATE OF LOCATION (See instructions on reverse side)	CHARTS AFFECTED
		° / ' "	° / ' "	D.M. Meters	D.P. Meters				
DAYBEACON	Grubbs Landing Daybeacon Black and White triangle <i>L-4/86</i>	39 47	75 27	52.68		FFA listing Feature on TP-00426	Hydro Range/Azimuth 7781		12312
LIGHT	Marcus Hook Range Front Light Station 104 <i>L-4/86</i>	39 46	75 28	32.677			F-2-6-L 1978		12312
LIGHT	(Marcus Hook Rear Range Light) <i>L-4/86</i>	39 45	75 30	12.718			Triang. Rec. 6/12/82		12312
LIGHT	(Bellevue Front Range Light) <i>L-4/86</i>	39 44	75 30	15.612			Triang. Rec. 6/12/82		12312
LIGHT	Marcus Hook Intake Light (Private Maint'd)	39 48	75 25	24.14		Pos. listing on TP-00245	Existence ver. (not field loc.)		12312
MARKER	Transcontinental Pipeline Marker 1 flashing green light	39 48	75 25	27.01		Pos. from FFA listing On TP-00245	Existence Ver. (not field loc.)		12312
MARKER	Transcontinental Pipeline Marker 2 Flashing green light	39 48	75 25	29.40		Pos. from FFA listing On TP-00245	Existence ver. (not field loc.)		12312
MARKER	Marker 3 Flashing green light	39 47	75 24	45.17		Pos. from FFA listing TP-00245	Existence ver. (not field loc.)		12312
MARKER	Transcontinental Pipeline Marker 4 Flashing green light	39 47	75 24	43.75		Pos. from FFA listing On TP-00245	Existence ver. (not field loc.)		12312
NOTE: Landmarks in the vicinity of this survey were checked and found to be adequately charted. No additions, revisions or deletions to be reported.									

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Marker relocated,
See Eval. Rpt. Sec. 2.c

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	ROBERT SNOW
POSITIONS DETERMINED AND/OR VERIFIED	ROBERT SNOW
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	

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

OFFICE	FIELD (Cont'd)
<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>8. 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>FIELD</p> <p>I. NEW POSITION DETERMINED OR VERIFIED 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>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>

DATE: February 17, 1983

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

Tide Station Used (NOAA Form 77-12): 853-8369 Pedericktown, New Jersey
853-8414 New Bridge, New Jersey
854-0433 Marcus Hook, Pennsylvania

Period: June 15 - September 23, 1982

HYDROGRAPHIC SHEET: H-10027

OPR: D218

Locality: Delaware River

Plane of reference (mean lower low water): 853-8369 = 2.64 ft.
853-8414 = 4.86 ft.
854-0433 = 2.87 ft.

Height of Mean High Water above Plane of Reference is 853-8369 = 4.2 ft.
853-8414 = 5.2 ft.
854-0433 = 5.7 ft.

17.2
5.7
11.5

REMARKS: Recommended Zoning:

1. In the Delaware River, zone direct on 854-0433, Marcus Hook, Pennsylvania.
2. In Oldmans Creek, New Jersey
 - a. West of longitude 75°25' zone direct on 854-0433.
 - b. East of longitude 75°25' to latitude 39°46.7' zone direct on 853-8414.
 - c. South of latitude 39°46.7' to 39°46.0' zone on 853-8414 and apply +15 minute time correction and x0.91 range ratio.
 - d. South on latitude 39°46.0' zone direct on 853-8369.

James C. Hubbard
Chief, Tidal Datums Section, Tides & Water
Levels Branch

GEOGRAPHIC NAMES

H-10027

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
BELLEFONTE											1
BELLEVUE											2
BIRCH CREEK											3
CLAYMONT											4
DELAWARE (title)											5
DELAWARE RIVER											6
GRUBBS LANDING											7
HOLLY OAK											8
JUMBO											9
MARCUS HOOK											10
MARCUS HOOK BAR											11
MARCUS HOOK CREEK											12
NAAMAN CREEK											13
NEW JERSEY (title)											14
NORTONVILLE											15
OLDMANS CREEK											16
OLDMANS POINT											17
PENNSYLVANIA (title)											18
RACCOON ISLAND (title)											19
STONEY CREEK											20
STONY CREEK											21
WORTHLAND											22
											23
											24
											25

Approved:

Charles E. Harrison

Chief Geographer - N/C62x5

24 JAN. 1985

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NO.: 10027

Number of positions	<u>2081</u>
Number of soundings	<u>8634</u>
Number of control stations	<u>5</u>

	<u>TIME-HOURS</u>	<u>DATE COMPLETED</u>
Preprocessing Examination	<u>20</u>	<u>15 DEC 1984</u>
Verification of Field Data	<u>264</u>	<u>17 OCT 1984</u>
Quality Control Checks	<u>190</u>	
Evaluation and Analysis	<u>105</u>	<u>April 9, 1985</u>
Final Inspection	<u>40</u>	<u>April 9, 1985</u>
TOTAL TIME	<u>619</u>	
Marine Center Approval		<u>26 April 1985</u>

Transmittal letter of survey and survey records will be included in the Descriptive Report to identify the records accompanying the survey.

ATLANTIC MARINE CENTER
EVALUATION REPORT

REGISTRY NO.: H-10027

FIELD NO.: HSB-10-7-82

Pennsylvania, New Jersey, Delaware, Delaware River, Vicinity of Oldmans Point to Raccoon Island

SURVEYED: June 15 through September 23, 1982

SCALE: 1:10,000

PROJECT NO.: OPR-D218-HSB-82

SOUNDINGS: Raytheon 719B Echo Sounder
Lead Line, Pole

CONTROL: Range/Azimuth
Del Norte/Theodolite

Chief of Party G. W. Jamerson

Surveyed by R. S. Snow
..... C. F. Bush
..... D. B. Elliott
..... M. J. McMann
..... M. C. Riddle

Automated Plot by Xynetics 1201 Plotter (AMC)

1. INTRODUCTION

a. There were no unusual problems encountered on this survey.

b. Changes in the Descriptive Report were made in red during office processing.

2. CONTROL AND SHORELINE

a. Control is adequately discussed in sections F and G of the Descriptive Report.

b. Shoreline originates with final reviewed Class III photogrammetric shoreline maps TP-00245 of 1975 and TP-00246 of 1975-78. Shoreline revisions in red are by the hydrographer. Shoreline in brown from chart 12312, 37th edition, is shown for orientation only.

c. Transcontinental Pipeline Marker No. 3, located at latitude 39°47'45"N, longitude 75°24'17"W on TP-00245 was relocated during the present survey. The new position, transferred from the final field sheet, was not determined by a fix; as a result, it was plotted as a private marker at latitude 39°47'42.5"N, longitude 75°24'12"W on the smooth sheet.

3. HYDROGRAPHY

- a. Depths at crossings are in good agreement.
- b. The standard depth curves are adequately delineated except for portions of the 0-foot depth curve because of its proximity to shore. Some 3-foot depth curves, a brown curve, and some dashed depth curves were added to emphasize shoal features.
- c. The development of the bottom configuration and the determination of least depths are considered adequate, except for the 12-foot sounding located at latitude 39°47'44"N, longitude 75°26'54"W which rises 6 feet above the bottom. Fathometer development and/or lead line should have been utilized to obtain the least depth over this feature.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records, and reports comply with the requirements of the "Hydrographic Manual" with the exceptions listed below:

- a. Some areas, located inshore or adjacent to large piers in the vicinity of Marcus Hook, were not surveyed. For example, additional sounding lines should have been run in latitude 39°48'30"N, longitude 75°25'05"W. No explanation of these void areas was provided by the hydrographer.
- b. Faulty positioning by range-azimuth resulted in a 5-foot depth crossing discrepancy at latitude 39°47'53"N, longitude 75°26'47"W. The erroneous positions were rejected during evaluation.
- c. In some cases, notes in the survey records do not clarify topographic detail as shown on the Class III maps; e.g., the double line feature extending from shore near latitude 39°49'00"N, longitude 75°24'00"W. Also, the new high water structures sketched in red on the final field sheet near latitude 39°48'22"N, longitude 75°25'15"W are not specifically identified.

5. JUNCTIONS

An adequate junction was effected with H-9964 (1981) on the north. The junction with H-10042 (1982) on the south will be completed during verification of that survey.

6. COMPARISON WITH PRIOR SURVEYS

- a. H-138 (1842) 1:10,000
H-148 (1841-43) 1:80,000
H-1394 (1878) 1:10,000
H-1501b (1881) 1:5,000
H-1502a (1881) 1:5,000
H-2497 (1900) 1:9,600

These surveys are dated prior to several changes resulting from Federal Channel Projects and numerous alongshore construction projects. Except in some areas inshore where only minor differences of 1-2 feet in depth exist, the bottom and shoreline have changed drastically due to extensive dredging, harbor improvements, and commercial projects.

The present survey is adequate to supersede these prior surveys within the common area.

- b. T-8771 (1946-49) 1:10,000
T-8772 (1946-49) 1:10,000

These photogrammetric shoreline maps cover the area common to the present survey and are subsequent to the prior surveys.

The shoreline, in many cases, has drastically changed since 1949 due to natural and man-made causes. Alterations along the north side of the river have occurred as a result of dredging, filling, and construction projects. Along the south side of the river, a significant change has occurred at the entrance to Oldmans Creek. Here, the shoreline has eroded as much as 250 meters.

The charted features listed below, which originate with T-8771, have been disproved by the present survey and should be deleted from the chart.

<u>Item</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Dashed line (row of piles)	39°46'55"	75°28'19"
Inshore portion of pier ruins	39°46'06"	75°27'18"
Dashed line (rock dike)	39°49'19"	75°23'48"

Ruins, two submerged dolphins, and a submerged pile were carried forward to the present survey.

With the addition of the items carried forward, the present survey is adequate to supersede the above surveys in the common area.

7. COMPARISON WITH CHART 12312 (37th Edition, August 22, 1981)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by numerous U.S. Corps of Engineers blueprints and other miscellaneous sources.

Attention is directed to the following items:

(1) Presurvey Review Item 75 (AWOIS number 1429), a dangerous sunken rock, charted in latitude 39°46'56"N, longitude 75°26'42"W, was not adequately investigated and should be retained as charted. The rock appears on the first edition (1913) of chart 295 from a source not readily ascertainable. A chain drag, consisting of two otterboards, a 60-foot towline, and a 50-foot bottom

chain, was used for disproval. The investigation was inadequate because the 50-meter (150-foot) line spacing between sweeps was too wide when compared with the effective width of the drag.

(2) The note "Being filled" in the dashed area limits charted in the vicinity of latitude 39°47'50"N, longitude 75°26'45"W originates with a miscellaneous source. This charted item was not mentioned by the hydrographer. The status of the proposed construction should be ascertained by the chart compiler.

(3) The sewer and two submerged piles, charted in the vicinity of latitude 39°47'55"N, longitude 75°24'20"W, originate with Chart Letter 161 of 1967. These structures were neither verified nor disproved by the present survey and should be retained as charted.

(4) The two piles charted in latitude 39°48'35"N, longitude 75°24'49"W, from a miscellaneous source, were not investigated by the hydrographer. These piles are referred to the chart compiler for final disposition.

(5) Many small pier extensions charted in the vicinity of Marcus Hook from miscellaneous sources differ from the most recent NOS topographic information. In some cases, remnants of these structures may exist in areas not investigated on the present survey. A final disposition of these features is deferred to the chart compiler.

(6) The 6-foot sounding, charted in latitude 39°47'26"N, longitude 75°25'59"W, from a miscellaneous source, was neither verified nor disproved by the present survey and should be retained as charted.

(7) The structure noted as a pipe, charted in latitude 39°49'01"N, longitude 75°24'01"W, originates with a U.S. Corps of Engineers construction permit (Chart Letter 749 of 1968). This item appears on TP-00245, but is not identified. It is described variously in the field records of the present survey as a discharge pipe, intake pipe, and a flood gate. Considering all of the above, the label "water intake pipe structure" has been applied to the smooth sheet.

Except as noted above, the present survey is adequate to supersede the charted hydrography within the common area.

b. Controlling Depths

(1) The charted controlling depths for the Bellevue and Marcus Hook Ranges originate with the U.S. Corps of Engineers surveys of May and July 1981, respectively. Present survey depths are in agreement with the tabulated controlling depths.

(2) The charted controlling depth note--3 ft Dec 1957--at the marked channel in the vicinity of latitude 39°46'50"N, longitude 75°26'30"W is based on miscellaneous information. Present survey depths are in agreement with the charted controlling depths.

(3) The charted 5-foot controlling centerline depth note for Oldmans Creek that falls within the limits of the present survey is based on a

miscellaneous source of March 1957. Evidence of extensive shoaling as noted on the chart was later reported in this area between 1973 and 1975. A single line of soundings on the present survey confirms shoaling in the creek.

c. Aids to Navigation

The aids to navigation located on the present survey are in substantial agreement with their charted positions and adequately mark the features intended.

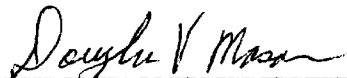
Black can buoy "1" near Oldmans Creek was located about 30 meters south of its charted position.

8. COMPLIANCE WITH INSTRUCTIONS

This survey adequately complies with the project instructions, except as noted in sections 3 and 4 of this report.

9. ADDITIONAL FIELD WORK

This is a good basic survey and no additional field work is recommended at this time.



Douglas V. Mason
Cartographic Technician
Verification of Field Data



Stephen R. Baumgardner
Cartographer
Standards Section (N/CG242)
Evaluation and Analysis




Robert R. Hill
Senior Cartographic Technician
Verification Check

Certification of Digital Data
H-10027

The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, sounding and digitized data printouts of the survey have been made.

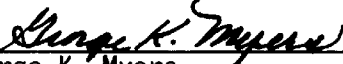
Certified: 24 April 1985


Robert G. Roberson
Chief, Evaluation and Analysis Group

Inspection Report
H-10027

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The survey complies with National Ocean Service (NOS) requirements except as noted in the Evaluation Report. The survey records comply with NOS requirements except where noted in the Evaluation Report.

Inspected



George K. Myers
Chief, Standards Section (N/CG242)
Hydrographic Surveys Branch

Approved 26 April 1985

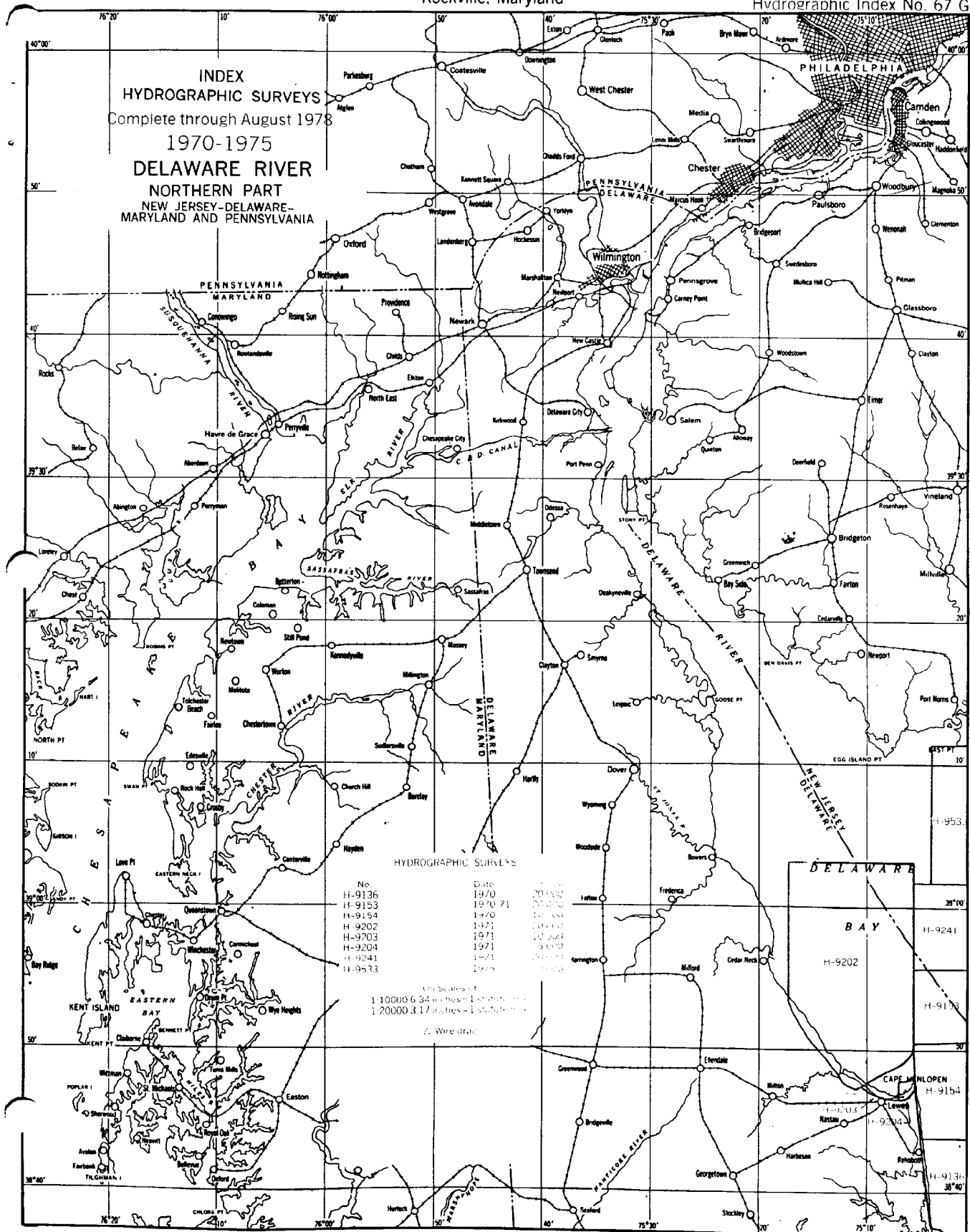


Wesley V. Hull, RADM, NOAA
Director, Atlantic Marine Center

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

Diagram No. 295-2

Hydrographic Index No. 67 G



MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10027

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
12312	8-3-90	John Pierce	Full Part Before After Marine Center Approval Signed Via Drawing No. 51
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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