

TP- 00063

TP- 00063

NOAA FORM 76-35 (3-76)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
FIELD EDITED MAP	
Map No. TP-00063	Edition No. 1
Job No. PH-6905	
Map Classification FINAL	
Type of Survey SHORELINE	
LOCALITY	
State DELAWARE	
General Locality DELAWARE BAY	
Locality CAPE HENLOPEN	
1969 TO 1970	
REGISTRY IN ARCHIVES	
DATE	

MAP NOT INSPECTED BY
QUALITY CONTROL OF PHOTOGRAMMETRY DIVISION
PRIOR TO REGISTRATION

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.		TYPE OF SURVEY		SURVEY TF. 00063	
DESCRIPTIVE REPORT - DATA RECORD				<input checked="" type="checkbox"/> ORIGINAL		MAP EDITION NO. (1)	
				<input type="checkbox"/> RESURVEY		MAP CLASS Final	
				<input type="checkbox"/> REVISED		JOB PH. 6905	
PHOTOGRAMMETRIC OFFICE Coastal Mapping Division Atlantic Marine Center Norfolk, VA				LAST PRECEDING MAP EDITION			
OFFICER-IN-CHARGE Roy K. Matsushige				TYPE OF SURVEY		JOB PH. _____	
				<input type="checkbox"/> ORIGINAL		MAP CLASS _____	
				<input type="checkbox"/> RESURVEY		SURVEY DATES:	
				<input type="checkbox"/> REVISED		19__ TO 19__	
I. INSTRUCTIONS DATED							
1. OFFICE				2. FIELD			
Aerotriangulation December 10, 1969 Compilation May 12, 1970 Amendment 1 April 1, 1971 Memo (Cancel field edit) December 14, 1979 Memo (Compilation Schedule) June 22, 1981				Field September 26, 1969 Amendment 1 October 7, 1969			
II. DATUMS							
1. HORIZONTAL: <input checked="" type="checkbox"/> 1927 NORTH AMERICAN				OTHER (Specify)			
2. VERTICAL: <input checked="" type="checkbox"/> MEAN HIGH-WATER <input checked="" type="checkbox"/> MEAN LOW-WATER <input type="checkbox"/> MEAN LOWER LOW-WATER <input type="checkbox"/> MEAN SEA LEVEL				OTHER (Specify)			
3. MAP PROJECTION Polyconic				4. GRID(S)			
				STATE Delaware		ZONE	
5. SCALE 1:5,000				STATE		ZONE	
III. HISTORY OF OFFICE OPERATIONS							
OPERATIONS				NAME		DATE	
1. AEROTRIANGULATION BY METHOD: Analytic LANDMARKS AND AIDS BY				D. Norman		April 1970	
2. CONTROL AND BRIDGE POINTS PLOTTED BY METHOD: Coradomat CHECKED BY				J. Dempsey			
				E. Homick			
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY				R. White		May 1970	
INSTRUMENT: Wild B-8				A. Shands		May 1970	
SCALE: 1:5,000				NA			
				NA			
4. MANUSCRIPT DELINEATION PLANIMETRY BY				R. White		May 1970	
				C. Bishop		May 1970	
METHOD: Smooth Draft				NA			
				NA			
SCALE: 1:5,000 HYDRO SUPPORT DATA BY				R. White		May 1970	
				C. Bishop		May 1970	
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY				C. Bishop		May 1970	
6. APPLICATION OF FIELD EDIT DATA BY				L. Graves		Nov. 1970	
				A. Shands		March 1972	
7. COMPILATION SECTION REVIEW BY				A. Shands		March 1982	
8. FINAL REVIEW BY				L. O. Neterer, Jr.		Mar. 1982	
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY				L. O. Neterer, Jr.		May 1982	
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY							
11. MAP REGISTERED - COASTAL SURVEY SECTION BY							

MAR 10 1983

NOAA FORM 76-36B
(3-72)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TP-00063

COMPILATION SOURCES

1. COMPILATION PHOTOGRAPHY

CAMERA(S) Wild RC-9 "M" Wild RC-8 "E" and "K"		TYPES OF PHOTOGRAPHY LEGEND (C) COLOR (P) PANCHROMATIC (I) INFRARED		TIME REFERENCE	
TIDE STAGE REFERENCE <input checked="" type="checkbox"/> PREDICTED TIDES <input type="checkbox"/> REFERENCE STATION RECORDS <input checked="" type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY				ZONE Eastern	<input checked="" type="checkbox"/> STANDARD
				MERIDIAN 75th	<input type="checkbox"/> DAYLIGHT
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
+ 69E(C)2847 thru 2851	23 Oct 1969	12:53	1:10,000	0.3 ft. below MLW	
+ 69E(C)2854 thru 2858	23 Oct 1969	13:00	1:10,000	0.3 ft. below MLW	
+ 69E(C)2868 thru 2873	23 Oct 1969	13:05	1:10,000	0.3 ft. below MLW	
+ 69K(I)4423 thru 4427	23 Oct 1969	12:53	1:10,000	0.3 ft. below MLW	
+ 69K(I)4430 thru 4434	23 Oct 1969	13:00	1:10,000	0.3 ft. below MLW	
+ 69K(I)4456 thru 4457	23 Oct 1969	13:12	1:10,000	0.3 ft. below MLW	
+ 69K(I) 4662 thru 4664	26 Oct 1969	09:41	1:20,000	0.1 ft. below MHW	

REMARKS *Centers not shown on the manuscript
+Tide coordinated photography

2. SOURCE OF MEAN HIGH-WATER LINE:

The mean high-water line was compiled from the above listed color photographs. The entire mean high-water line was recompiled from 1970 Field Edit.

3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE:

The mean low-water line was compiled from the above listed tide coordinated infrared low water photography.

The low-water line was verified by 1970 Field Edit.

4. CONTEMPORARY HYDROGRAPHIC SURVEYS (List only those surveys that are sources for photogrammetric survey information.)

SURVEY NUMBER	DATE(S)	SURVEY COPY USED	SURVEY NUMBER	DATE(S)	SURVEY COPY USED

5. FINAL JUNCTIONS

NORTH	EAST	SOUTH	WEST
TP-00062	TP-00062	TP-00062	TP-00062

REMARKS

This map is an inset of TP-00062.

NOAA FORM 76-36C
(3-72)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEYTP-00063
HISTORY OF FIELD OPERATIONSI. ☒ FIELD INSPECTION OPERATION☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J. K. Wilson	Oct. 1969
2. HORIZONTAL CONTROL	RECOVERED BY J. K. Wilson	Oct. 1969
	ESTABLISHED BY None	
	PRE-MARKED OR IDENTIFIED BY P.B.W.	Oct. 1969
3. VERTICAL CONTROL	RECOVERED BY NA	
	ESTABLISHED BY NA	
	PRE-MARKED OR IDENTIFIED BY NA	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY None	
	LOCATED (Field Methods) BY None	
	IDENTIFIED BY None	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY BY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY None	
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY None	

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

2. VERTICAL CONTROL IDENTIFIED

NA

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
69 M 1591	Military, 1962		
69 M 1591	Lewes, Coast Guard Life Saving Station, Mast, 1962		

3. PHOTO NUMBERS (Clarification of details)

None

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES: ☐ REPORT ☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

2 - Forms C & GS 152
12 - Forms C & GS 526

NOAA FORM 76-36C
(3-72)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TP-00063

HISTORY OF FIELD OPERATIONS

I. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J. K. Wilson	Oct. 1970
2. HORIZONTAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	None None None
3. VERTICAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	NA NA NA
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY LOCATED (Field Methods) BY IDENTIFIED BY	P. Walbolt R. Tibbetts, P. Walbolt P. Walbolt
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	R. Tibbetts
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	None

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

None

2. VERTICAL CONTROL IDENTIFIED

NA

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION

3. PHOTO NUMBERS (Clarification of details)

69 E(C) 2847, 2869, 2870

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

See forms 76-40 for sheet TP-00062

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES: ☐ REPORT ☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

2 sets of plans labeled A & B for location of submerged pipe line

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

1-field edit ozalid

1-field edit ozalid

NOAA FORM 76-36D
(3-72)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATIONTP-00063
RECORD OF SURVEY USE

I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Compilation complete pending field edit	May 1970	Class III Superseded	June 9, 1970	
Field Edit applied, Compilation complete	Nov. 1970	Class I		
Final Review	Mar. 1982	Final		

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
2 Forms		Nov 1982	Appropriate forms (76-40) are attached with this Descriptive Report

2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: _____3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: _____

III. FEDERAL RECORDS CENTER DATA

1. ☐ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.
 2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☒ FORM NOS ~~76-40~~ SUBMITTED BY FIELD PARTIES. 76-40
 3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
 ACCOUNT FOR EXCEPTIONS: 11 form 6465 526, photo 69M1591
 Duplicate copies of final 76-40 forms
 4. ☒ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: Nov 1982

IV. SURVEY EDITIONS (This section shall be completed each time a new map edition is registered)

SECOND EDITION	SURVEY NUMBER TP - _____ (2)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
THIRD EDITION	SURVEY NUMBER TP - _____ (3)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
FOURTH EDITION	SURVEY NUMBER TP - _____ (4)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	

Official Mileage for Cost Accounts

Sheet No.-Area Sq.Mi.

00050	3
00051	1
00052	3
00053	5
00054	3
00055	4
00056	5
00057	4
00058	3
00059	3
00060	2
00061	3
00062	4
00063	2
00116	2
00121	2
00180	7

TOTAL 54

JOB PH-6905
DELAWARE BAY, DELAWARE
COASTAL MAPPING
SCALE 1:10,000

FIVE FATHOM BANK
298
H+01 & ev 6m

DELAWARE
-298
H+04 & ev 6m

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

TP-00063

This 1:5,000 scale shoreline manuscript is one of seventeen maps that comprise project PH-6905, Delaware Bay, Delaware. The project encompasses the western part of Delaware Bay from Woodland Beach, latitude 39°20', south to Indian River, latitude 38°35'.

Correspondence from the Chief of Photogrammetry, dated December 14, 1979, called for the cancellation of field edit on TP-00050 through TP-00058 and TP-00116 and registering these as Final Class III maps. Maps TP-00059 through TP-00063, TP-00121 and TP-00180 were field edited and are to be registered as Final maps. The purpose of the maps was to provide contemporary shoreline data in the support of hydrographic operations and in nautical chart revision.

Field work prior to compilation was accomplished in October 1969. This involved the identification of horizontal control by premarking methods in order to meet aerotriangulation requirements.

Photographic coverage for aerotriangulation was provided in October 1969 using Panchromatic film with the "M" camera at 1:80,000 scale. Compilation photography was taken with color film in the "E" camera at 1:10,000 scale.

Tide coordinated, color and infrared 1:10,000 scale low water photographs, and infrared 1:20,000 scale photographs were taken in October 1969. The color photographs were taken with the "E" camera and the infrared were taken with the "K" camera.

Analytic aerotriangulation was performed at the Washington Science Center April 3, 1970.

Compilation was performed from office interpretation of both infrared and color October 1969 photography. Preparation of hydrographic support photography was done at the Atlantic Marine Center and submitted to the field in June 1970.

Field Edit was completed in October 1970. Field Edit was applied and completed at the Atlantic Marine Center in November 1970.

The final review was performed at the Atlantic Marine Center in March 1982.

This descriptive report contains all pertinent information used to compile this final map.

The original base manuscript and all pertinent data were forwarded to the Washington Science Center for final registration.

FIELD INSPECTION

TP-00063

There was no field inspection prior to compilation. Field work accomplished was limited to the recovery and identification of the horizontal control necessary for the aerotriangulation of the project.

Photogrammetric Plot Report
PH-6905
Delaware Bay

April 3, 1970

21. Area Covered

The area covered in this project is the southwest shore of Delaware Bay. The manuscripts are TP-50 through TP-62 and TP-116 at 1:10,000 scale and TP-63 at 1:5,000 scale.

22. Method

Two strips of 1:80,000 scale panchromatic photography and one strip of 1:30,000 scale color photography were bridged by analytic aerotriangulation methods. Points were selected on the 1:80,000 scale photography common to the 1:40,000 and 1:20,000 scales to be used for compilation of the 1:10,000 scale manuscripts and as an aid during hydrography. Similarly, the 1:30,000 scale bridging photography was used to control the 1:10,000 scale photography for compilation of the 1:5,000 scale manuscript. Attached are sketches showing strips bridged and legend with fit to control.

23. Adequacy of Control

The horizontal control was adequate. Nevertheless, the following discrepancy should be noted: a substitute station was established for LEWES COAST GUARD LIFE SAVING STATION MAST, 1962 which appears in two strips. A discrepancy of 6.5 degrees in azimuth was found between the two azimuth stations from which angles were turned to the substitute station. When the position was computed using the azimuth from Delaware Breakwater West End Light, 1933 the discrepancy in both strips was approximately 13 feet. When the position was computed using the azimuth from LEWES WEST OIL FACTORY CHIMNEY, 1962 the fit to control was excellent. This latter position is evidently correct. No reason could be found for the discrepancy.

24. Supplemental Data

Elevations were taken from USGS topographic quadrangles to meet the vertical control requirements.

-2-

25. Photography

The photography was adequate.

Respectfully submitted,



Don O. Norman

Approved and Forwarded,



Henry P. Eichert, Chief
Aerotriangulation Section

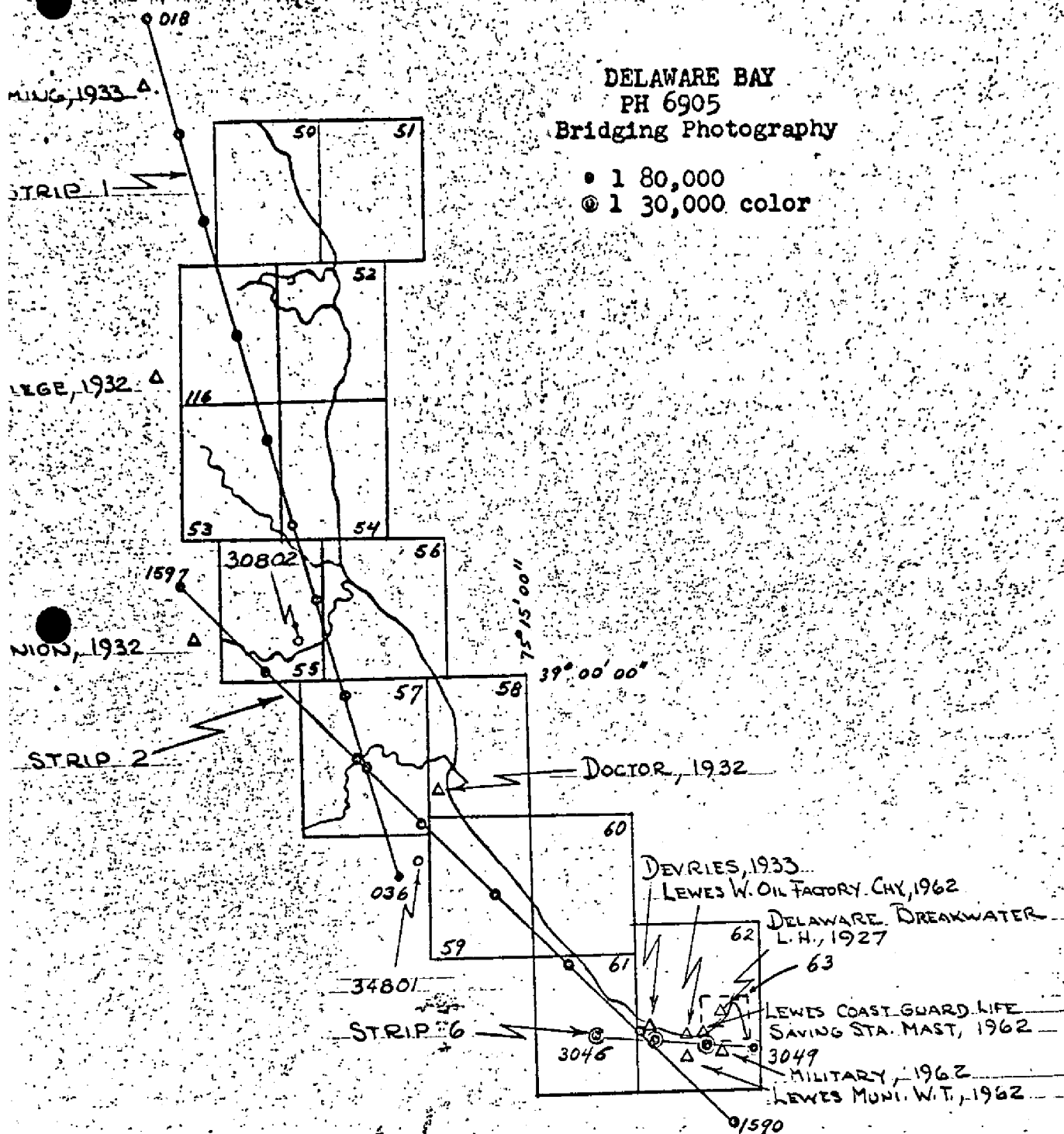
DELAWARE BAY

PH 6905

Bridging Photography

• 1 80,000

⊙ 1 30,000 color



LEGEND

△ CONTROL USED IN ADJUSTMENT

CLOSURES OF BRIDGE TO CONTROL SHOWN
IN PARENTHESES

△ CONTROL USED AS CHECK

STRIP 1

- △ FLEMING, 1933 SUB. A (-40, +1.06)
- △ COLLEGE, 1932 RM 2 SUB. A (+2.20, -2.51)
- △ 30802 TIE POINT
- △ UNION STA. A (-6.36, +2.20)
- △ DOCTOR, 1932 RM 6 (-4.23, +6.75)
- △ 34301 TIE POINT (+1.92, -.57)

STRIP 2

- △ MILITARY, 1962 SUB. A (+.56, +1.26)
- △ MILITARY, 1962 SUB. B (0.0, 0.0)
- △ LEWES COAST GUARD LIFE SAVING STA. SUB. A (-96, -.77)
- △ DEVRIES, 1962 RM (+1.66, -1.83)
- △ DEVRIES, 1933 (+1.86, +.94)
- △ DOCTOR, 1932 RM 6 (0.0, 0.0)
- △ UNION, 1932 SUB. A (0.0, 0.0)

STRIP 6

- △ DEVRIES, 1962 RM (0.0, 0.0)
- △ DEVRIES, 1933 SUB. A (-.02, -.11)
- △ LEWES COAST GUARD LIFE SAVING STA. MAST SUB. A (+1.05, 4.06)
- △ LEWES MUNI. WATER TANK, 1962 (+.75, -1.22)
- △ LEWES W. OIL FACTORY CHY., 1962 (+2.54, +.36)
- △ MILITARY, 1962 SUB. A (0.0, 0.0)
- △ MILITARY, 1962 SUB. B (-.81, +.45)
- △ DELAWARE BREAKWATER L.H., 1927 (-.76, +.39)

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	STATION NAME	JOB NO.	GEODETTIC DATUM		AEROTRI- ANGULATION POINT NUMBER	COORDINATES IN FEET		GEOGRAPHIC POSITION		ORIGINATING ACTIVITY	REMARKS
			TP-00063	PH-6905		STATE	ZONE	ϕ LATITUDE	λ LONGITUDE		
	MILITARY (FORT MILES RANGE CONTROL TOWER) 1962	Vol. II Pg. 156				$x=$	ϕ 38°46'32.49613"		1002.1 (848.1)		
						$y=$	λ 75°06'03.39557"		82.0 (1366.4)		
	LEWES WEST OIL FACTORY CHIMNEY, 1962	Vol. II Pg. 157				$x=$	ϕ 38°46'53.55492"		1651.4 (198.8)		
						$y=$	λ 75°07'00.10965"		02.6 (1445.6)		
	RADIO (DEL.), 1932	GP Vol. #1 Pg. 3				$x=$	ϕ 38°47'24.892"		767.6 (1082.6)		
						$y=$	λ 75°05'28.820"		695.6 (752.4)		
	DELAWARE BREAKWATER LIGHT- HOUSE (DEL.), 1927	GP Vol. #1 Pg. 73				$x=$	ϕ 38°47'49.215"		1517.6 (332.6)		
						$y=$	λ 75°06'01.243"		30.0 (1418.0)		
	FORT MILES OBSERVATION TOWER NO 8, 1962	Quad 380751 Pg. 154				$x=$	ϕ 38°47'17.31306"		533.9 (1316.3)		
						$y=$	λ 75°05'42.83922"		1033.9 (414.2)		
	FORT MILES OBSERVATION TOWER NO 13, 1962	Quad 380751 Pg. 158				$x=$	ϕ 38°46'45.28642"		1396.5 (453.7)		
						$y=$	λ 75°07'12.79928"		309.0 (1139.3)		
	FORT MILES OBSERVATION TOWER, NO 7, 1962	Quad 380751 Pg. 155				$x=$	ϕ 38°46'34.35507"		1059.4 (790.8)		
						$y=$	λ 75°05'35.30368"		852.2 (596.1)		
						$x=$	ϕ				
						$y=$	λ				
						$x=$	ϕ				
						$y=$	λ				
						$x=$	ϕ				
						$y=$	λ				
COMPUTED BY R. White										DATE	4/30/70
LISTED BY										DATE	
HAND PLOTTING BY										DATE	

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO. TP-00063	JOB NO. PH-6905	STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRI- ANGULATION POINT NUMBER	GEODETTIC DATUM NA 1927		ORIGINATING ACTIVITY	
					COORDINATES IN FEET STATE _____ ZONE _____	GEOGRAPHIC POSITION ϕ LATITUDE λ LONGITUDE	Coastal Mapping Division, AMC	REMARKS
LEWES, COAST GUARD LIFE SAVING STATION MAST, 1962	380751 1067				χ =	ϕ 38°46'51.05840"	1574.4 (275.8)	
					y =	λ 75°07'15.52925"	374.8 (1073.4)	
					χ =	ϕ		
					y =	λ		
					χ =	ϕ		
					y =	λ		
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					y =	λ		
					χ =	ϕ		
					y =	λ		
COMPUTED BY R. White				DATE 5/20/70	χ =	ϕ	DATE 5/20/70	
					y =	λ	DATE	
LISTED BY				DATE	χ =	ϕ	DATE	
					y =	λ	DATE	
HAND PLOTTING BY				DATE	χ =	ϕ	DATE	
					y =	λ	DATE	

COMPILATION REPORT

TP-00063

31. DELINEATION

Delineation was by the Wild B-8 stereoplotter and by graphic methods using color and infrared photography.

32. CONTROL

The horizontal control was adequate. See Photogrammetric Plot Report dated April 3, 1970.

33. SUPPLEMENTAL DATA

None

34. CONTOURS AND DRAINAGE

Contours are inapplicable to the project. Drainage was compiled from office interpretation of the photographs.

35. SHORELINE AND ALONGSHORE DETAILS

The mean high-water line, mean low-water line, and alongshore details were compiled from office interpretation of the photographs using infrared photography that was flown at both mean high water and mean low water.

36. OFFSHORE DETAILS

Offshore details were compiled from office interpretation of the mean low water infrared and color photographs.

37. LANDMARKS AND AIDS

Appropriate copies of 76-40 forms are being submitted with this descriptive report.

38. CONTROL FOR FUTURE SURVEYS

None

TP-00063

39. JUNCTIONS

See the attached form 76-36B, Item 5 of the descriptive report concerning junctions.

40. HORIZONTAL AND VERTICAL ACCURACY

See Item #32.

46. COMPARISON WITH EXISTING MAPS

A comparison was made with the following U. S. Geological Survey Quadrangle:

Cape Henlopen, Delaware-New Jersey, scale 1:24,000, dated 1954.

47. COMPARISON WITH NAUTICAL CHARTS

A comparison was made with the following National Ocean Survey Charts:

No. 411, scale 1:40,000, 9th edition dated May 16, 1970 (corrected through Notice to Mariners 20-1970) and No. 1218, scale 1:80,000, 16th edition, dated October 25, 1969 (corrected through Notice to Mariners 13-1969).

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None

ITEMS TO BE CARRIED FORWARD

None

Submitted by:

R. White

R. White
Cartographic Technician

Date: May 21, 1970

Approved:

B. H. A. Baun

for Albert C. Rauck, Jr.
Chief, Coastal Mapping Section

TP-00063

49. NOTES FOR THE HYDROGRAPHER

Because of insufficient photo coverage in the offshore area of Cape Henlopen, the position of the breakwater is weak. The two ends of this breakwater are tied into position by two triangulation stations, but the break in tangents at the turning points are weak.

Please recover the two triangulation stations, "South Range West, 1918" and "Delaware Breakwater Front Range Lighthouse (Old tower), 1882" and give distances to the mean high water line on either side of the breakwater at those points. If the stations are not recoverable, locate the breaks in the tangents by ground survey methods. Also give measurements to the mean high water line on either side and at the ends of the breakwater from the two stations.

FIELD EDIT REPORT
Job PH-6905
West Shore Delaware Bay
Delaware

This report is submitted for Map Number TP-00062; it includes a 1:5,000 scale map TP-00063. The field edit was accomplished during the Summer season of 1970.

52 ADEQUACY OF COMPILATION

The compilation is generally good; and after application of field edit corrections, additions, and deletions; compilation will be adequate.

A third order traverse was run between triangulation stations RADIO 1932 and DE VRIES 1933 to test the horizontal accuracy of the maps. Thirteen points were tested, and the data was submitted to the Atlantic Marine Center for comparison and evaluation.

54 RECOMMENDATIONS

None.

55 GEOGRAPHIC NAMES

After conferring with the Chief of Division and The Geographer, it was determined that a Discrepancy Names Investigation would be adequate for all work in Jobs PH-6905 and PH-7002. This discrepancy type report is incorporated within this report.

56 SHORELINE AND ALONGSHORE FEATURES

Distances were measured to the mean high water line from a few traverse points; however in some instances it was necessary to supplement these with distances from photo points. These have been pricked on 1:5,000 ratio photos No. 69-E-2847, 2869, and 2870; and on 1:10,000 ratio photos 69-E-2889 and 2890.

All cables, docks, piers, piling, etc., were investigated and either shown or deleted on the field-edit sheet.

SUPPLEMENT TO FIELD EDIT REPORT

On October 21, 1970, the Chief of Photogrammetry, Atlantic Marine Center requested that I scale the x and y coordinates of 11 mapped points. These points had been selected by a survey party to determine the horizontal accuracy of two maps.

Maps T-00062 and T-00063 were tested by making a comparison of the scaled position with the position of these points derived from a traverse that closed better than 1 part in 39,000.

Of seven detail points located on Map sheet T-00062 (1:10,000 scale), two points were thought to be poor selections prior to scaling (62-07 is the corner of an ill-defined parking lot, 62-13 is the tangential junction of two roads). As anticipated, these two points failed to check by 17 and 34 feet respectively. Of the remaining five points of comparison, errors range from a minimum of 2 feet to a maximum of 13 feet. The average error is 8 feet.

Positions for four detail points were furnished on Map sheet T-00063 (1:5,000 scale). The errors range from a minimum of 2 feet to a maximum of 5 feet. The average error is 4 feet.

E. T. Jenkins
E. T. Jenkins
Supervisory Cartographer

ETJ:khp

cc: C141, C142, C14

TP-00062

55 GEOGRAPHIC NAMES

These names appear on parts of both the Lewes, Delaware and the Cape Henlopen, Delaware-New Jersey Preliminary Names Sheets.

NEW NAMES

THE CAPES - This name applies to the area immediately northeast of the Lewes and Rehoboth Canal, to the south of Lewes, and to the North of Rehoboth.

DISPUTED NAMES

BROADKILL RIVER - Please see report for TP-00061.

DODD NECK(R)

WOLFE NECK

The family name DODD is used for this feature.

STAUFFER GLADE(R)

STAUFFERS GLADE

WOLFE GLADE

Everyone contacted locally uses the family name STAUFFER GLADE.

THE SALT FLATS(R)

FLAT SANDS - quadrangle sheet

REHOBOTH FLATS - chart 411

THE SALT FLATS is the name used locally for this area. No one ~~even~~ knew the other names.

REFERENCES

Although many persons were contacted while investigating the names, the following persons are considered as references due to both their knowledge and interest in local names and lore:

Norman M. Thomas - contractor - Milton, Delaware 19968

Joseph Lank Marshall - The Postmaster - Lewes, Delaware 19958

Carl R. Davidson - The Postmaster - Nassau, Delaware 19969

Thomas Best - store owner - Nassau, Delaware 19969

Howard E. Millman, Sr. - farmer - Nassau, Delaware 19969

57 OFFSHORE FEATURES

It was necessary to locate the angle points of the two offshore breakwaters and eleven ice breakers by ground survey methods. The positions were computed by A.M.C. and by the SHIP WHITING, and are enclosed with the field edit data.

58 LANDMARKS AND AIDS

Form 567 is submitted for all nautical landmarks and fixed aids to navigation.

Harbor of Refuge North End Light was razed in August 1970 and a new light erected about 25 feet to the south-southeast. A new third-order position was determined.

The radar towers in the southeast portion of the map were razed during the 1970 Summer season.

59 GENERAL STATEMENT

All field edit notes have been made in violet ink both on the field edit sheet and ratio photographs.

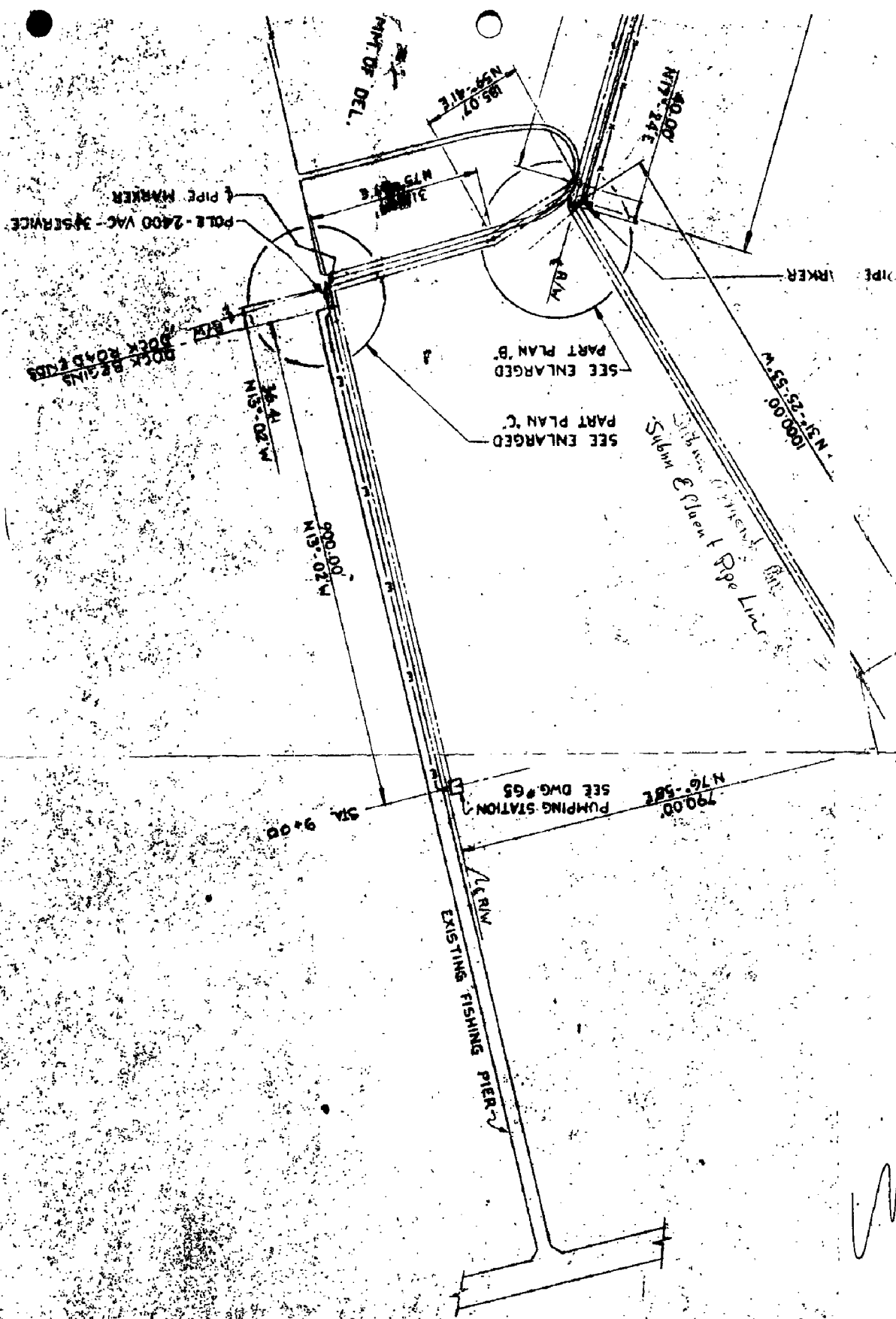
The Commanding Officer of the SHIP WHITING has been kept informed of all field edit operations. He has selected the Nautical Landmarks and has been furnished copies of all pertinent data.

15 October 1970

Submitted by:

Robert S. Tibbetts
Robert S. Tibbetts
Surveying Technician

Fig. 1



[Handwritten signature]

This plan is subject to future survey data, and is based upon the existing conditions that it is not to be used directly or indirectly in any way detrimental to the interests of

DORR-OLIVER
ENGINEERING, LTD.



PIPE MARKER
APPROX. M.H.W.

13.25'
FENCE TO
PROPERTY LINE

PIPE MARKER

EXISTING FENCE

20.00' RIGHT OF WAY

10.00'

15.00' PROPERTY LINE TO R/W

ENLARGED PART PLAN 'B'

SCALE: 1" = 50.00'

4.0' FENCE TO R/W

EXISTING FENCE

1945 TRAIL R.P.

PART B

See Photo 69 E 2255
For location of
Pipe Marker

FIXES FOR HIGH AND LOW WATER LINE, WEST SIDE, CAPE HENLOPEN

- 1 - LEWES WEST OIL FACTORY CHIMNEY, 1962
- 2 - DELAWARE BREAKWATER LIGHTHOUSE, 1927
- 3 - HARBOR OF REFUGE LIGHTHOUSE (1927) ^{1896?}
- 4 - LEWES MUNICIPAL, WATER TANK, 1962
- 5 - ICEBREAKER NUMBER 1, 1970 (see field edit for TP-00062 for position)
- 6 - FORT MILES, U.S. NAVY WATER TANK, 1962
- 7 - HARBOR OF REFUGE, NORTH END LIGHT, 1970 (see field edit for TP-00062 for position)

Mean High Water Line Fixes

Fix 1	1	62-24	Fix 2	1	53-44	Fix 3	1	43-57
	2			2			2	
	3	65-20		3	74-34		5	58-52
	4-2	60-42		4-2	51-25		4-2	40-27

Fix 4	1	28-05	Fix 5	6	61-28	Fix 6	6	50-53
	2			2			2	
	5	78-32		5	103-30		5	113-51
	4-2	23-00		2-3	138-56		2-7	126-40

Mean Low Water Line Fixes

Fix 7	6	45-42	Fix 8	6	55-20	Fix 9	6	77-16
	2			2			2	
	5	123-00		5	112-55		5	90-23
	2-7	136-15		2-7	125-49		2-7	103-43

Fix 10	6	94-14	Fix 11	6	104-34	Fix 12	1	58-00
<i>good</i>	2			2			2	
	5	72-53	<i>trifle shaky</i>	5	63-18	<i>good</i>	5	47-28
	2-7	84-46		2-7	75-00		4-2	54-19

Fix 13	1	73-28
<i>good</i>	2	
	3	60-38
	4-2	70-42

REVIEW REPORT

SHORELINE

TP-00063

61. GENERAL STATEMENT:

See summary included with this report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

Not applicable

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

A comparison was made with U.S.G.S. quadrangle: Cape Henlopen, Delaware-New Jersey both 1:24,000 scale and dated 1954.

64. COMPARISON WITH HYDROGRAPHIC SURVEYS:

A comparison was made with verified copies of hydrographic surveys H-9203, H-9204 and H-9154. No significant differences were noted.

65. COMPARISON WITH NAUTICAL CHARTS:

A comparison was made with Charts 12216, 20th edition, dated June 27, 1981, scale 1:40,000; Chart 12304, 27th edition, dated March 25, 1981, scale 1:80,000 and Chart 12214, 33rd edition, dated June 7, 1980, scale 1:80,000.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

This map complies with project instructions and meets the requirements for National Standards of Map Accuracy.

Submitted by:

Lowell D. Neterer, Jr.
Lowell Neterer, Jr.
Final Reviewer

Approved for forwarding:

Billy H. Barnes
Billy H. Barnes
Chief, Photogrammetric Branch, AMC

Approved:

Chief, Photogrammetric Branch, Rockville Chief, Photogrammetry Division

July 29, 1981

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6905 (Delaware Bay, Delaware)

TP-00063

Atlantic Ocean

Breakwater Harbor

Cape Henlopen

Conrail (RR)

Delaware Bay

Lewes

The Capes See field edit report *SDHP*

Approved by:

Charles E. Harrington

Charles E. Harrington
Chief Geographer, OA/C3x5

Information of Dissemination of Project Material

PH-6905

Delaware Bay

NATIONAL ARCHIVE/FEDERAL RECORD CENTER

Computer Readout
Control Station Identification Cards
Field Edit Ozalids
Field Photographs
NOAA Form 76-41 (Descriptive Report Control Record)

Project Diagrams

Plot Report

Bureau Archives

Descriptive Report

Registered Maps

Reproduction Division

8x Reduction Negative of Each Maps

Office of Staff Geographer

Geographer Names Standard

NOAA FORM 76-40 (8-74)				U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION				ORIGINATING ACTIVITY			
Replaces C&GS Form 567.				NONFLOATING AIDS FOR CHARTS				<input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> COMPILATION ACTIVITY <input type="checkbox"/> FINAL REVIEWER <input type="checkbox"/> QUALITY CONTROL & REVIEW GRP. <input type="checkbox"/> COAST PILOT BRANCH (See reverse for responsible personnel)			
REPORTING UNIT (Field Party, Ship or Office)		STATE		LOCALITY		DATE					
Coastal Mapping Section		Delaware		South Shore Delaware Bay		May 1970					
AMC, Norfolk, VA											
OPR PROJECT NO. The following objects <input checked="" type="checkbox"/> HAVE <input checked="" type="checkbox"/> NOT <input type="checkbox"/> been inspected from seaward to determine their value as landmarks.				DATUM NA 1927				METHOD AND DATE OF LOCATION (See instructions on reverse side)			
JOB NUMBER		SURVEY NUMBER		POSITION				CHARTS AFFECTED			
PH-6905		TP-00063		LATITUDE		LONGITUDE					
				° / ' " D.M. Meters		° / ' " D.P. Meters					
CHARTING NAME (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)				DESCRIPTION							
Delaware Bay West Side Harbor of Refuge											
Delaware Breakwater Light (Delaware Breakwater Lighthouse, 1927)				38 47		49.21 1517.6		75 06		01.24 30.0	
Delaware Breakwater West End Light 1 *				38 48.0				75 07.0			
Lewes Breakwater Front Light				38 47		15.8 486		75 07		6.8 163	
Lewes Breakwater Middle Light				38 47		6.7 208		75 07		18.7 451	
Lewes Ferry Terminal Fog Signal				38 47.0				75 07.2			
*This light was reestablished in 1973.											
Cape Henlopen Radio beacon				38 47.6				75 05.5			

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	
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 1. 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 (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
FIELD 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 - Photogrammetric Vis - Visually 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	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.
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

LANDMARKS FOR CHARTS

<input checked="" type="checkbox"/> TO BE CHARTED <input type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED		REPORTING UNIT (Field Party, Ship or Office) Coastal Mapping Section	STATE Delaware	LOCALITY South Shore Delaware Bay	DATE May 1970
The following objects HAVE <input type="checkbox"/> HAVE NOT <input type="checkbox"/> been inspected from seaward to determine their value as landmarks. OPR PROJECT NO.		JOB NUMBER PH-6905	SURVEY NUMBER TP-00063	DATUM NA 1927	

ORIGINATING ACTIVITY	
<input type="checkbox"/> HYDROGRAPHIC PARTY	<input type="checkbox"/> PHOTO FIELD PARTY
<input type="checkbox"/> GEODETIC PARTY	<input checked="" type="checkbox"/> COMPILATION ACTIVITY
<input type="checkbox"/> FINAL REVIEWER	<input type="checkbox"/> QUALITY CONTROL & REVIEW GRP.
<input type="checkbox"/> COAST PILOT BRANCH	(See reverse for responsible personnel)

CHARTING NAME	OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM		POSITION				METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
				NA 1927		LATITUDE		LONGITUDE		OFFICE	FIELD	
				° /	D.M. Meters	° /	D.P. Meters					
TOWER		PH-6905	TP-00063	38 47	38.9 1201	75 30	30.4 735		F-L June 15, 1970		12216 12304 12214	
TOWER				38 47	17.31 533.9	75 05	42.84 1033.9		F-V-1 June 15, 1970		12216 12304 12214	
STACK				38 46	53.55 1651.4	75 07	00.11 02.6		F-V-1 June 15, 1970		12216 12304 12214	
TOWER				38 46	45.28 1396.5	75 07	12.80 309.0		F-V-1 June 15, 1970		12216 12304 12214	
TOWER				38 46	34.36 1059.4	75 05	35.30 852.2		F-V-1 June 15, 1970		12216 12304 12214	
TOWER				38 46	32.50 1002.1	75 06	03.40 82.0		F-V-1 June 15, 1970		12216 12304 12216	

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	<input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	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'	
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 (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
FIELD 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 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	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
**FIELD POSITIONS are determined by field observations based entirely upon ground survey methods. **PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.	

