

NOAA FORM 76-35
(3-76)

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

DESCRIPTIVE REPORT

Map No.

TP-01138

Edition No.

I

Job No.

CM-8107

Map Classification

III

Type of Survey

SHORELINE

LOCALITY

State

NEW JERSEY

General Locality

SOUTH of SANDY HOOK BAY

Locality

NAVESINK & SHREWSBURY RIVERS

1981 TO 19

REGISTRY IN ARCHIVES

DATE

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.		TYPE OF SURVEY		SURVEY TP. <u>01138</u>	
DESCRIPTIVE REPORT - DATA RECORD				☒ ORIGINAL		MAP EDITION NO. <u>(1)</u>	
				☐ RESURVEY		MAP CLASS <u>III</u>	
				☐ REVISED		JOB <u>KK CM-8107</u>	
PHOTOGRAMMETRIC OFFICE Photogrammetry Branch: Rockville				LAST PRECEDING MAP EDITION			
OFFICER-IN-CHARGE CMDR Simmons / Lawrence Fritz				TYPE OF SURVEY		JOB PH. _____	
				☐ ORIGINAL		MAP CLASS _____	
				☐ RESURVEY		SURVEY DATES:	
				☐ REVISED		19__ TO 19__	
I. INSTRUCTIONS DATED							
1. OFFICE				2. FIELD			
Aerotriangulation Jan. 22, 1982 Office Feb. 25, 1982 Change No. 1				Field Sept. 17, 1981			
II. DATUMS							
1. HORIZONTAL: ☒ 1927 NORTH AMERICAN				OTHER (Specify)			
2. VERTICAL: ☒ MEAN HIGH-WATER ☒ MEAN LOW-WATER ☐ MEAN LOWER LOW-WATER ☐ MEAN SEA LEVEL				OTHER (Specify)			
3. MAP PROJECTION Transverse Mercator				4. GRID(S)			
				STATE New Jersey		ZONE	
5. SCALE 1:10,000				STATE		ZONE	
III. HISTORY OF OFFICE OPERATIONS							
OPERATIONS				NAME		DATE	
1. AEROTRIANGULATION BY				S. Solbeck		3/82	
METHOD: <u>Analytic</u> LANDMARKS AND AIDS BY				S. Solbeck		3/82	
2. CONTROL AND BRIDGE POINTS PLOTTED BY				J. Molar/R. Rodkey		4/82-9/83	
METHOD: <u>Coradi</u> CHECKED BY				N/A			
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY				Schad & Taylor/Heazel		4/82-1/84	
COMPILATION CHECKED BY				F. Wright / P. Dempsey		5/82-1/84	
INSTRUMENT: <u>WILD B-8 & NOSAP</u> CONTOURS BY				N/A			
SCALE: <u>1:10,000/1:15,000</u> CHECKED BY				N/A			
4. MANUSCRIPT DELINEATION PLANIMETRY BY				Schad & Taylor / Heazel		5/82-2/84	
1:10,000 scale shoreline map was CHECKED BY				F. Wright / J. Schad		5/82-2/84	
photo-reduced to 1:15,000 scale CONTOURS BY				N/A			
METHOD: <u>Smooth drafted</u> CHECKED BY				N/A			
SCALE: <u>1:15,000</u> HYDRO SUPPORT DATA BY				S. Solbeck		4/82	
				S. Solbeck		4/82	
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY				N/A			
6. APPLICATION OF FIELD EDIT DATA BY				N/A			
				N/A			
7. COMPILATION SECTION REVIEW BY				J. Schad		12/83-3/84	
8. FINAL REVIEW BY				J. Schad		12/83-5/84	
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY				P. Dempsey		2/85	
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY				J. Schad		4/85	
11. MAP REGISTERED - COASTAL SURVEY SECTION BY				T. Kornspan		4/85	

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

COMPILATION SOURCES

TP-01138

1. COMPILATION PHOTOGRAPHY

CAMERA(S) RC-8 E f1= 152.71 RC-10 Z f1= 153.14		TYPES OF PHOTOGRAPHY LEGEND		TIME REFERENCE	
TIDE STAGE REFERENCE		(C) COLOR (P) PANCHROMATIC <u>R</u> INFRARED		ZONE	
☐ PREDICTED TIDES ☒ REFERENCE STATION RECORDS ☐ TIDE CONTROLLED PHOTOGRAPHY				Eastern	
				MERIDIAN	
				75 th	
				☒ STANDARD ☐ DAYLIGHT	

NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE
81 Z(c) 8510-14	9/9/81	0919	1:30,000	See form 76-36B(1)
81 Z(c) 8521-26	9/9/81	0928	1:30,000	
81 ER 5521-25 HW	10/17/81	0929	1:30,000	
81 ER 5534 HW	10/17/81	1004	1:30,000	
81 ER 5541-45 HW	10/17/81	1307	1:30,000	
81 ER 5554-55 HW	10/17/81	1334	1:30,000	
81 ER 5506-07 LW	10/17/81	0856	1:30,000	
81 ER 5567-71 LW	10/20/81	0813	1:30,000	
81 ER 5574-76 LW	10/20/81	0828	1:30,000	

REMARKS

2. SOURCE OF MEAN HIGH-WATER LINE:

The infrared photographs listed above.

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

The infrared photographs listed above.

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-00758 & TP-00759	N/A	N/A	N/A

REMARKS

Above junctions to photo revised maps from aerial photographs-Sept., 1981.

TIDE - COORDINATED PHOTOGRAPHY
TP -01138

2A

LOCATION AND PHOTOGRAPHY	TIDE STATIONS (In operation at time of photography)	STAGE OF TIDE	MEAN RANGE
81 ER 5506-07	Red Bank	-1.11 MHW +0.89 MLW	
81 ER 5521-25	Sea Bright (outside) Normandie Highlands	+1.28 MHW -0.59 MHW +0.34 MHW	
81 ER 5533-34	Normandie	+0.04 MHW	
81 ER 5540-45	Sea Bright (inside) Sea Bright (outside) Normandie Highlands	+0.45 MHW -1.72 MHW +0.37 MHW +0.15 MHW	
81 ER 5553-55	Normandie	+0.11 MHW	
81 ER 5567-71	Sea Bright (outside) Sea Bright (inside) Normandie Highlands Red Banks	+0.31 MLW +0.13 MLW -0.08 MLW -0.29 MLW +0.12 MLW	
81 ER 5574-76	Sea Bright (inside)	+0.07 MLW	

REMARKS:

CM-8107
TIDE DATA

Stages of tide were determined using reference station records for the SANDY HOOK, N.J. gage.

Tide stages are shown in feet.

Mean ranges and hourly time/height differences used to compute stages of tide were taken from the 1981 Tide Tables publication. Tide computations for the times of photos were made using the WANG computer. Output from the WANG listed stages referred to MLW. Mean ranges for the Reference Station and each subordinate station were subtracted from computed values (+/- MLW) to refer tide stages to MHW. Tide stages referred to MLW were determined from reference station records vs hourly/height difference to the subordinate station.

HISTORY OF FIELD OPERATIONS.

TP-01138

1. ☒ FIELD INSPECTION OPERATION☐ FIELD EDIT OPERATION.

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J. Dunford	Nov. 81
2. HORIZONTAL CONTROL	RECOVERED BY J. Dunford	Nov. 81
	ESTABLISHED BY J. Dunford	Nov. 81
	PRE-MARKED OR IDENTIFIED BY J. Dunford	Nov. 81
3. VERTICAL CONTROL	RECOVERED BY N/A	
	ESTABLISHED BY N/A	
	PRE-MARKED OR IDENTIFIED BY N/A	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY N/A	
	LOCATED (Field Methods) BY N/A	
	IDENTIFIED BY N/A	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION ☐ COMPLETE ☐ SPECIFIC NAMES ONLY ☒ NO INVESTIGATION	BY N/A
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY N/A	
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY N/A	

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

2. VERTICAL CONTROL IDENTIFIED

N/A

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
81 Z (c)-			
8521	SHREW 1981		
8524	ELEVEN 2 1962		
8527	WEST END, ST. MICHAELS CHURCH		
	CROSS 1934		

3. PHOTO NUMBERS (Clarification of details)

N/A

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

N/A

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES:

☐ REPORT☒ NONE

6. BOUNDARY AND LIMITS:

☐ REPORT☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

N/A

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

1 FIELD BOOK -CM8107 NEW JERSEY, SHREWSBURY and NAVESINK:

Project Report

Fieldman's computations

C S I cards

NOAA forms; 75-63, 75-65, 76-52, 75-82A,

3-Photographs (listed above)

76-86, 76-170 and 76-135

RECORD OF SURVEY USE

TP-01138

I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Shoreline, alongshore and offshore data	5/19/82	1:10,000 scale (A & B) Class III	5/82	5/82
Shoreline, alongshore and offshore data	2/84	1:15,000 scale Class III	4/85	

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
5 pages		4/85	NOAA Form 76-40 - Nonfloating Aids and Landmarks
1 page		4/85	Possible Landmark Value

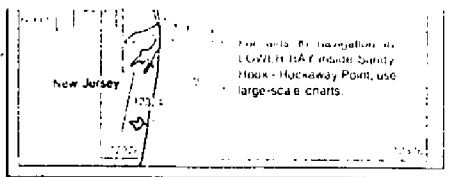
2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: _____
3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: _____

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.
3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
ACCOUNT FOR EXCEPTIONS: _____
4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: _____

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 ☐ REVISED ☐ RESURVEY	
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	MAP CLASS ☐ II. ☐ III. ☐ IV. ☐ V. ☐ FINAL	
THIRD EDITION	SURVEY NUMBER TP - _____ (3)	JOB NUMBER PH - _____	TYPE OF SURVEY ☐ REVISED ☐ RESURVEY	
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	MAP CLASS ☐ II. ☐ III. ☐ IV. ☐ V. ☐ FINAL	
FOURTH EDITION	SURVEY NUMBER TP - _____ (4)	JOB NUMBER PH - _____	TYPE OF SURVEY ☐ REVISED ☐ RESURVEY	
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	MAP CLASS ☐ II. ☐ III. ☐ IV. ☐ V. ☐ FINAL	



For more information on LORAN-C use Sandy Hook-Hudonway Point, use large-scale charts.

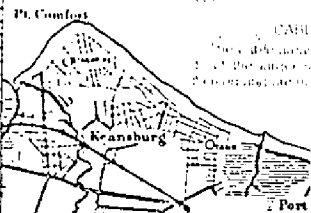
NOTE F

Sandy Hook Channel light 15 is frequently relocated to mark the northern tip of Sandy Hook.

CABLE LINES

There are several cable lines in the bay. The chart shows the location of the cables. For more information, see the chart.

SANDY HOOK BAY



Only marine radio stations have been listed.

CAUTION: Only marine radio stations have been listed.

Guard Light Units and Defense Mapping Agency Hydrographic/Topographic Center Publication 117 (A & B).

Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

Station positions are shown thus: (A) Accurate location (B) Approximate location

DAYLIGHT REFLECTORS

Daylight reflectors have been placed on the following aids to navigation. Individual reflector identification on these aids has been omitted from this chart.

CAUTION

Improved channels shown by broken lines are subject to shoaling, particularly at low ebb.

FISH TRAP LINES

Boundary lines of fish trap areas are shown. Submerged piling may exist in these areas.

NOAA VHF-FM WEATHER BROADCAST

The National Weather Service station listed below provides continuous marine weather broadcasts. The range of reception is variable but for most stations is usually 20 to 40 miles from the antenna site.

New York, N.Y. KWO-35 162.55 MHz

HYDROGRAPHY

The most recent basic hydrographic survey used in the compilation of this chart was accomplished by the NOAA Ship Pierce, commanded by Commander Joseph W. Drog, NOAA.

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center, 800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility. If telephone communication is impossible (33 CFR 153).

LORAN-C

GENERAL EXPLANATION

LORAN-C FREQUENCY 100

PULSE REPETITION INTERVAL 0.050

STATION TYPE D 40°18'00"

Station letter designation

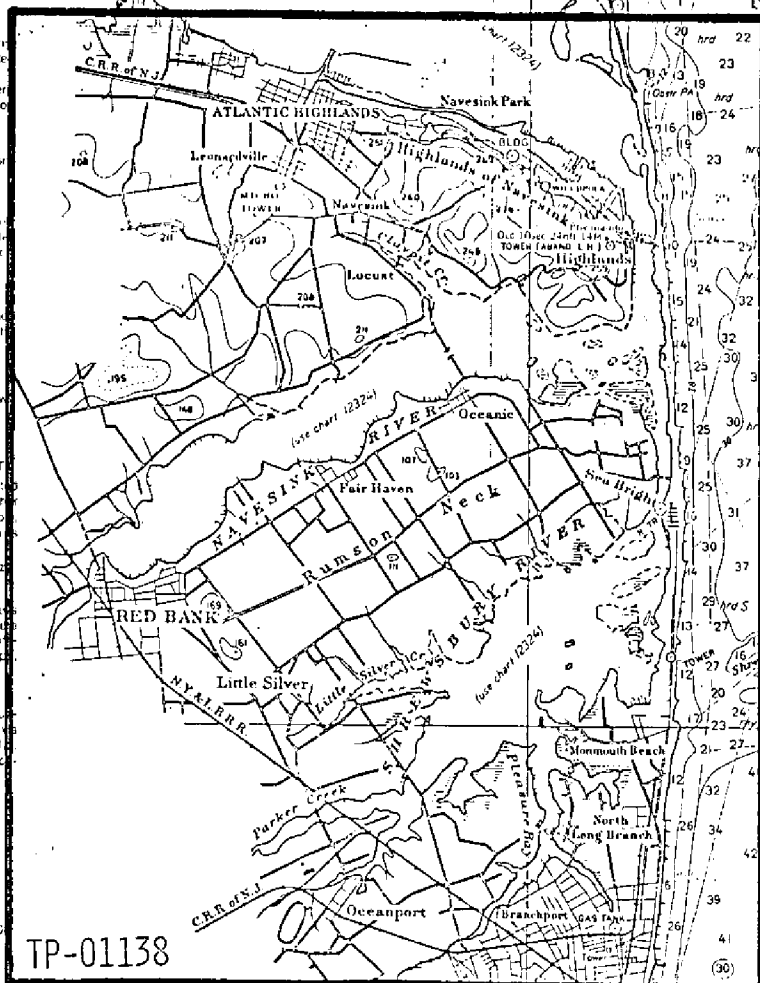
M Master

W Secondary

S Tertiary

Z Quaternary

EXAMINE Chart



CM-8107

NAVESINK & SHREWSBURY RIVERS
NEW JERSEY
SHORELINE MAPPING

SCALE 1:15,000

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

TP-01138

The 1:15,000 scale map is the only map of project CM-8107, Navesink and Shrewsbury Rivers, New Jersey.

The purpose of this map was to furnish support for hydrographic activity scheduled to begin May 1981 and for use in the construction of a new nautical chart.

The map limits for the project are latitude $40^{\circ}18'00''$ - $40^{\circ}25'30''$ and longitude $73^{\circ}57'30''$ - $74^{\circ}05'30''$. This map portrays the shorelines of the Navesink and Shrewsbury Rivers, the Atlantic coastline from Long Branch to Sandy Hook and the Sandy Hook Bay shoreline, New Jersey.

Photo coverage for the project was adequately obtained with the Wild RC-10(Z) camera flown at 1:30,000 scale. Bridging/compilation photography (natural color film) was taken on September 9, 1981. Black-and-white infrared photography was taken on October 20, 1981, based on predicted tides.

Field work was accomplished November 1981 and prior to compilation consisted of the recovery, establishment and identification by premarking methods of horizontal control necessary for aerotriangulation. Hydro control points for range azimuth or range range Del-Norte would be required for the survey and an attempt was made by coastal personnel to identify, describe, and monument the photo points for this project. Instructions for the locating of hydro control points were not written for this phase of the project.

Analytic aerotriangulation was adequately provided by the Washington Science Center, March 1982. This activity also included ruling the base manuscript and providing ratio photographs for compilation.

Compilation by office interpretation of the 1:30,000 scale color photographs was performed at the Coastal Mapping Section, Rockville, Maryland in April 1982 and January 1983. The MHW and MLW infrared photographs were ratioed to map scale and were used to graphically delineate the MHW line and the MLW line. Copies of the Class III manuscript and applicable source data were forwarded to the hydrographic survey party.

Field edit was not performed on this project.

Final review was performed at the Washington Science Center in May 1984. A Chart Maintenance Print and a Hydrographic Print was prepared and forwarded to the Marine Chart Branch and Hydrographic Survey Branch.

The Descriptive Report for this map contains all pertinent information used to produce this map.

NAVESINK AND SHREWSBURY RIVERS, NEW JERSEY

On November 2, 1981 four Coastal Field personnel departed Norfolk, Va. in two trucks enroute to Sandy Hook, NJ to conduct field surveys for Project CM-8107 , Navesink and Shrewsbury Rivers, New Jersey, Shoreline Mapping. They began field work on November 3. On November 4, the Section Chief departed Norfolk in a 3/4 ton Suburban and joined the Party on November 5 to assist on the Project.

The original Project required that three horizontal control stations be identified using two substitute stations at each site. The requirements were outlined in Project Instructions Dated September 17, 1981.

A Hydrographic Survey of the two rivers will be conducted by a Hydro Field Party based out of AMC in 1982, therefore, the Photogrammetry Division offered to establish horizontal control by office bridging methods on selected photo points that could be used to control the hydro. It was decided that control points for range-azimuth or range-range Del-Norte would be required for the survey and an attempt would be made by Coastal personnel to identify, describe, and monument, the photo points during this Project. Instructions for this portion of the Project were not written.

Since this was the first time a project of this kind had been attempted it was decided to not only identify photo points for bridging control positions but to also establish horizontal positions on the photo points within third-order Class I traverse specifications. The results of the bridging positions could then be compared with positions obtained by field survey methods. To my knowledge there has never been a thorough test to determine the accuracy of control stations positioned by office methods. This Project presented an excellent opportunity to do so, and the information obtained should be very useful for future planning. It could be presented at the Hydro Conference if the data is processed by the middle of January 1982.

To accomplish this Project a third-order traverse was ran that covered both rivers. Triangulation station NEW BRIDGE was the starting station in the traverse. Azimuth

checks were obtained to triangulation stations RICH 1934, SANDY HOOK LIGHTHOUSE, NAVESINK LIGHT NORTH, and NAVESINK LIGHT SOUTH. A 5 second azimuth check was obtained between RICH and NAVESINK LIGHT SOUTH. STATION RICH was used for the starting azimuth.

The traverse covering the Navesink River closed on N.G.S. STATION McCLEESE. The closure was 1:44,133 or 0.72 ft. in X and 0.04 ft. in Y. The traverse covering the Shrewsbury River closed on N.G.S. STATION RACON. The closure was 1:14,587 or 0.78 ft. in X and 1.49 ft. in Y. Third-order Class I traverse methods were observed, using the following equipment:

Wild T-2 Theodolites.

K&E Uniranger E.O.D.M. (calibrated in Corbin, Va. by N.G.S.)

H.P 3808 E.O.D.M. (calibrated in Corbin, VA by N.G.S.)

Wild Tripods

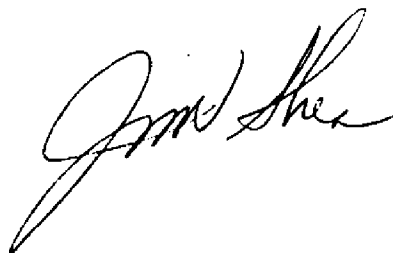
Wild T-2 Targets

Retro-Ray E.O.D.M. Prisms (calibrated -0.030 meter)

Signal Lamps (made in Corbin, VA. by N.G.S.)

Eight (8) new 3rd order traverse stations were established; fifteen (15) photo points were identified and 3rd order positions established on them; nine (9) photo points were identified that will require office positions (these nine points do not have 3rd order field survey positions). A C.S.I. card was completed for each photo point and the points pricked on photos. The photo point data will be submitted in one package and the photo I.D. data submitted in a separate package. Photographs of each photo point were taken to assist the compiler and to aid in future recovery by field units.

Total time spent on field work including travel time from Norfolk to New Jersey and return was 488 man hours. Salaries including 112 hours overtime and 40 hours holiday pay was \$5602.98. Overtime pay on this type project is considered necessary due to the nature of the work. Travel expenses for the Project were \$2308.20 for a total cost of \$7911.18.



Photogrammetric Plot Report
Navesink and Shrewsbury Rivers
New Jersey
CM-8107

March 1982

21. Area Covered

The area covered by this report is the shoreline of northeastern New Jersey which includes the Navesink and Shrewsbury Rivers, Sandy Hook Bay, the Intracoastal Waterway, and the Atlantic Ocean. The area is covered by two 1:10,000 scale manuscripts; TP-01138A and TP-01138B.

22. Method

Two strips of 1:30,000 scale color photography were bridged by standard analytic aerotriangulation methods. Strip one was adjusted using field identified control and supplemented by office identified control. Once adjusted, tie points from this strip provide the sole control for the adjustment of strip two. The two strips were then adjusted simultaneously using the 185 photo block adjustment program. The block results were provided to the compilation section.

Common points were located between the bridging photography and the 1:30,000 scale black-and-white infrared photography for ratioing purposes. The bridging photography was also ratioed and, like the infrared photography, is to be used for compilation.

A series of hydrographic photo points were field identified and provided to this office as a check between the methods of field surveying and those of aerotriangulation (see Fit to Control). An additional series of photo points were office identified using the NOSAP stereocomparator. These are provided as supplemental hydrographic aids.

Ratio prints have been ordered. The manuscripts will be plotted based on the New Jersey (Transverse Mercator) state plane coordinate system.

23. Adequacy of Control

In the block adjustment that used four field identified sub points (519101, 521102, 524102 and 527102) and one photo point (PP-09) a systematic trend in ground X was noticed in points along the eastern side of the project.

The points and the trend are as follows:

<u>Point No.</u>	<u>X</u>	<u>Y</u>
527700 (PP-00)	+2.7	+0.8
522110	+1.3	-0.6
523701 (PP-01)	+2.6	+0.4
523122	+2.4	-2.3
523716 (PP-16)	+2.5	+0.1
523703 (PP-03)	+1.8	-0.9
524146	+1.3	-1.6

To reduce this trend, it was decided to use PP-00 as control for the adjustment in place of one of the sub points.

The results are as follows:

<u>Point No.</u>	<u>X</u>	<u>Y</u>
527700 (PP-00)	+0.3	-0.1
522110	-0.3	-1.2
523701 (PP-01)	+1.0	+0.6
523122	+1.0	-2.0
523716 (PP-16)	+1.0	+0.4
523703 (PP-03)	+1.0	-0.6
524146	+1.0	-1.4

All other control proved adequate for completion of the project.

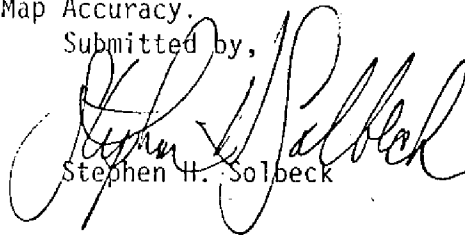
24. Supplemental Data

USGS quads were used to provide vertical control for the strip and block adjustments. Nautical charts were used to locate landmarks and aids to navigation.

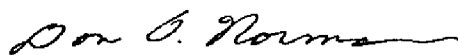
25. Photography

The coverage, overlap, and quality of the photography proved adequate for completion of the project. The manuscript for this project meets the National Standards of Map Accuracy.

Submitted by,


Stephen H. Solbeck

Approved and Forwarded:



Don O. Norman
Chief, Aerotriangulation Section

CM-8107

Navesink and Shrewsbury Rivers, New Jersey

Fit to Control
(In Feet)

Stations Held in the Adjustment

<u>Block Adjustment Positions</u>	<u>Point No.</u>	<u>X</u>	<u>Y</u>
1. Red Bank, St. James Church, Cross, 1934	511130	4.360	-1.605
2. Sandy Hook Point Light, 1940	519101	-.012	-.057
3. Sandy Hook Lighthouse, Final, 1835	519103	-.293	.367
4. Shrew, 1981 - Sub Pt B	521102	-1.239	-1.474
5. Highlands, N. Radar Dome, 1962	522110	-.306	-1.249
6. Rumson, Holy Cross, Spire 1934	523122	1.023	-1.966
7. Station Eleven 2, 1962 Sub Pt A	524101	-.680	.565
Sub Pt B	524102	-.278	.234
8. Monmouth Beach, Coast Guard Cupola, 1934	524146	.980	-1.407
9. Long Branch, Methodist Episcopal Church Spire, 1934	525148	-1.170	.389
10. Long Branch JCP&L Co., Concrete Stack, 1934	525150	.013	-1.266
11. Long Branch JCP&L Co., Gas Tank, 1934	525151	-2.770	-5.174
12. Long Branch Church of the Sea, Cross, 1934	526153	1.204	.769
13. West End, St. Michaels Church Cross, 1934	527100	-.843	-2.674
Sub Pt A	527101	.225	.951
Sub Pt B	527102	-.052	-.017

NOAA FORM 76-41 (5-75)		DESCRIPTIVE REPORT CONTROL RECORD				U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
MAP NO.	JOB NO.	GEODETTIC DATUM	ORIGINATING ACTIVITY	GEOGRAPHIC POSITION		REMARKS	
STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRIANGULATION POINT NUMBER	COORDINATES IN FEET STATE NEW JERSEY ZONE	ϕ LATITUDE	λ LONGITUDE		
TP-01138	CM-8107		NA-1927			Rockville, MD.	
MONMOUTH BEACH COAST GUARD RADIO TOWER 1926	QUAD-400742 STA-1004	46A	X=2,192,812.75 Y= 550,393.13	ϕ 40 20 32.350 λ 73 58 29.955		TOWER DESTROYED STA. STILL USABLE	
MONMOUTH BEACH COAST GUARD CUPOLA 1934	QUAD-400733 STA-1005	524146	X=2,192,899.84 Y= 550,348.36	ϕ 40 20 31.901 λ 73 58 28.836			
LONG BRANCH METHODIST EPISCOPAL CHURCH SPIRE 1934	PC Page 90	525148	X=2,191,458.75 Y= 542,435.18	ϕ 40 19 13.818 λ 73 58 48.238			
LONG BRANCH J C P & L CO. CONCRETE STACK 1934	PC Page 139	525150	X=2,190,244.02 Y= 537,892.78	ϕ 40 18 29.025 λ 73 59 04.371			
LONG BRANCH J C P & L CO. GAS TANK 1934	PC Page 95	525151	X=2,190,325.59 Y= 537,762.76	ϕ 40 18 27.734 λ 73 59 03.331			
LONG BRANCH CHURCH OF THE SEA CROSS 1934	QUAD-400733 STA-1006	526153	X=2,190,596.05 Y= 535,494.99	ϕ 40 18 05.304 λ 73 59 00.066			
NAVESINK LIGHT NORTH 1869	GP 573	521403	X=2,189,518.16 Y= 570,091.46	ϕ 40 23 47.250 λ 73 59 10.544			
NAVESINK LIGHT SOUTH 1869			X=2,189,623.48 Y= 569,888.86	ϕ 40 23 45.240 λ 73 59 09.203			
HIGHLANDS NORTH RADAR DOME 1962	QUAD-400733 STA-1007	522110	X=2,187,240.27 Y= 588,166.48	ϕ 40 23 28.401 λ 73 59 40.172			
OCEANIC 1981		139	X=2,181,302.833 Y= 565,131.004	ϕ λ		(FIELD POSITION)	
COMPUTED BY		DATE	COMPUTATION CHECKED BY			DATE	
LISTED BY JAMES H. TAYLOR		DATE 4/27/82	LISTING CHECKED BY JAMES SCHAD			DATE 4/27/82	
HAND PLOTTING BY		DATE	HAND PLOTTING CHECKED BY			DATE	

SUPERSEDES NOAA FORM 76-41, 2-71 EDITION WHICH IS OBSOLETE.

NOAA FORM 76-41 (6-75)										U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
DESCRIPTIVE REPORT CONTROL RECORD										ORIGINATING ACTIVITY ROCKVILLE, MD.	
MAP NO. TP-01138	JOB NO. CM-8107	GEODETTIC DATUM NA-1927		COORDINATES IN FEET STATE NEW JERSEY ZONE		GEOGRAPHIC POSITION φ LATITUDE λ LONGITUDE		REMARKS			
STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRI- ANGULATION POINT NUMBER	X	Y	X	Y	φ	λ			
RUMSON HOLY CROSS SPIRE 1934	QUAD-400733 STA-1008	523122	X=2,191,150.55	Y= 559,275.06	φ 40 22 00.244	λ 73 58 50.532					
RED BANK 1981		143	X=2,164,918.390	Y= 554,926.133	φ	λ			(FIELD POSITION)		
MOLLY PITCHER HOTEL CUPOIA 1934	QUAD-400742 STA-1075	28	X=2,165,300.70	Y= 554,031.97	φ 40 21 10.281	λ 74 04 24.921					
RED BANK BROAD ST BANK BLDG FLAGPOLE 1934	QUAD-400742 STA-1096	29	X=2,167,398.43	Y= 553,580.21	φ 40 21 05.677	λ 74 03 57.867					
RED BANK ST JAMES CHURCH CROSS 1934	QUAD-400742 STA-1099	511130	X=2,167,450.82	Y= 552,477.81	φ 40 20 54.780	λ 74 03 57.287			(FIELD POSITION)		
FLAGPOLE 1981		141	X=2,167,402.811	Y= 554,634.537	φ	λ			(FIELD POSITION)		
NORMAN 1981		131	X=2,191,449.39	Y= 564,020.179	φ	λ			(FIELD POSITION)		
LONG BRANCH POST OFFICE WEATHER VANE FLAG 1934	PC PAGE 90	55	X=2,189,279.00	Y= 535,807.00	φ 40 18 08.49	λ 73 59 17.03					
LONG BRANCH SCHOOL 3 FLAGPOLE 1934	PC PAGE 95	48	X=2,191,434.00	Y= 542,757.00	φ 40 19 17.00	λ 73 58 48.52					
STATION ELEVEN 2 1962	QUAD-400733 STA-1003	45	X=2,192,913.19	Y= 550,232.90	φ 40 20 30.759	λ 73 58 28.675					
COMPUTED BY		DATE	COMPUTATION CHECKED BY								
LISTED BY JAMES H. TAYLOR		DATE 4/27/82	LISTING CHECKED BY JAMES SCHAD								
HAND PLOTTING BY		DATE	HAND PLOTTING CHECKED BY								

SUPERSEDES NOAA FORM 76-41, 2-71 EDITION WHICH IS OBSOLETE.

NOAA FORM 76-41
(6-75)U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	JOB NO.	GEODETIC DATUM	ORIGINATING ACTIVITY	GEOGRAPHIC POSITION		REMARKS
STATION NAME	SOURCE OF INFORMATION (Index)	COORDINATES IN FEET STATE NEW JERSEY ZONE	NA-1927	ϕ LATITUDE λ LONGITUDE		
GUN 1981		134		ϕ		(FIELD POSITION)
				λ		
SEA BRIGHT 1981		132		ϕ		(FIELD POSITION)
				λ		
LITTLE SILVER 1981		136		ϕ		(FIELD POSITION)
				λ		
RACON USE 1934 RM 2 1981		137		ϕ		(FIELD POSITION)
				λ		
HIGHLANDS SCHOOL 1934	G34510 PAGE 573, 140			ϕ	40 24 11.254	
				λ	73 59 49.307	
SHREW 1981		521100		ϕ		(FIELD POSITION)
				λ		
ATLANTIC HIGHLANDS WEST MEASURED MILE 1970	QUAD-4007421 STA-1009			ϕ	40 25 28.225	
				λ	74 02 31.231	
				ϕ		
				λ		
				ϕ		
				λ		
				ϕ		
				λ		
COMPUTED BY		DATE	COMPUTATION CHECKED BY			DATE
LISTED BY James H Taylor		DATE 4/27/82	LISTING CHECKED BY James Schod			DATE 4/27/82
HAND PLOTTING BY		DATE	HAND PLOTTING CHECKED BY			DATE

SUPERSEDES NOAA FORM 76-41, 2-71 EDITION WHICH IS OBSOLETE.

15

COMPILATION REPORT

TP-01138

31. Delineation

Delineation was the interface between water and land by stereoscopic instrument and graphic methods. The preliminary map was compiled in two parts (A&B) at 1:10,000 scale using the Wild B-8 stereoplotter.

The MHW line was compiled by office interpretation of the color photographs and was compiled graphically from 1:30,000 scale infrared photographs which were ratioed to 1:10,000 map scale and controlled by detail delineated using the Wild B-8. The infrared photographs for the outer coastline were inadequate to delineate the shoreline because of improper stage of tide.

The MLW line was compiled graphically from 1:30,000 scale ratio infrared photographs which were ratioed to 1:10,000 map scale. Map detail of the color photographs was used to control the MLW ratio infrared photos.

Infrared photographic coverage does not exist below latitude 40°19'00" along the outer coastline.

The 1:10,000 scale maps were photo reduced to 1:15,000 scale maps and smooth drafted according to Office Instruction: Change No.1, Supplement to Instructions dated 2/25/82.

The color compilation photographs were used to compile the road network at 1:15,000 scale using the Wild B-8 instrument and then smooth drafted onto the final compilation manuscript.

The new chart required an extension of the 1:10,000 scale map from latitude 40°24'00" to 40°25'30". This was accomplished by transferring all control point position and map junction detail to a new 1:10,000 scale manuscript. Delineation was by stereoinstrument (NOSAP). The manuscript was photoreduced to 1:15,000 scale and smooth drafted to complete the limits of the final manuscript.

32. Control

Horizontal control was provided by Aerotriangulation Section and meets the National Standards of Map Accuracy. Vertical control was taken from USGS quads to level the stereomodels.

33. Supplemental Data - None34. Contours and Drainage

Contours are not applicable to this project. Drainage was from office interpretation of the color photographs.

35. Shoreline and Alongshore Details

All shoreline and alongshore details were delineated from office interpretation of the 1:30,000 scale photographs as described in item 31. No field edit will be done on this manuscript.

36. Offshore Detail

Offshore detail was delineated from office interpretation of the 1:30,000 scale photographs as described in item 31.

37. Landmarks and Aids

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

38. Control for Future Surveys

Twenty-four photo points to be used as hydrographic control stations were selected by the field party and identified for subsequent office location. Four of these points were not located during aerotriangulation due to poor image quality.

In addition to these points, thirty office identified hydrographic points and their positions were established by Aerotriangulation Unit to supplement the field selected positions. A list of the hydrographic positions has been forwarded to the Hydrographic Unit.

39. Junctions

Refer to NOAA Form 76-368, item 5.

40. through 45. Not Applicable

46. Comparison with Existing Maps

A comparison has been made with the following U.S. Geological Survey Quadrangles:

Sandy Hook, NJ-NY, 1:24,000 scale, 1954, photorevised 1970, USGS
Long Branch, NJ-NY, 1:24,000 scale, 1954, photorevised 1970, USGS

TP-01138 was compared with the following:

TP-00758 (Revision Print) BP-116591
TP-00759 (Revision Print) BP-116592
TP-00760 (Revision Print) BP-116593

TP-00758 - Shoreline at Wagner Creek, latitude 40°25.1', longitude 74°02.9' differs from TP-01138.

TP-00758 - Shoreline at Wagner Creek, latitude 40°25.1', longitude 74°02.9' differs from TP-01138. TP-01138 is shown correctly.

TP-00759 - The interface between the limits of marsh and the water was symbolized erroneously when compiled in 1976. An apparent shoreline symbol should be shown. The shoreline of Sandy Hook (Atlantic Ocean side) has been revised on TP-01138 from latitude 40°25'30" south.

TP-00760 - Numerous pile areas at latitude 40°22'00" to longitude 74°00'30" to 74°03'00" are anchorage areas with buoys floating in these areas and are not compiled on TP-01138.

The narrow bands of grass in water, marsh fringes, and small piers were not compiled at the 1:15,000 scale. As mentioned for TP-00759, the shoreline compilation of 1976 with the shoreline symbol of dash lines does not represent marsh or back limits of marsh, but the apparent shoreline and is in general agreement with the 1983 map compilation.

The shoreline on the Atlantic Ocean side from latitude 40°24'00" north does not agree with TP-01138.

47. Comparison with Nautical Chart

A comparison has been made with the following National Ocean Service Chart:

Chart 12324, 1:40,000 scale, 19th Edition, December 13, 1980 and 22nd Edition, February 11, 1984.

Submitted by,

James Schuch

Approved and Forwarded:

Patrick D. [Signature] (Acting)

Chief, Coastal Mapping Unit

GEOGRAPHIC NAMES

FINAL NAME SHEET

CM-8107 (Navesink and Shrewsbury Rivers, New Jersey)

TP-001138 (Sheet B of A and B)

Atlantic Ocean
Barley Point
Black Point Creek
Blossom Cove
Claypit Creek
Fair Haven
Fairview
Fourth Creek
Guyon Point
Highlands
Highlands Beach
Jones Point
Lewis Point
Locust
Locust Point
Lower Rocky Point
McClees Creek
Marion Lake
Navesink
Navesink Beach (locality)
Navesink River
Normandie
Red Bank (locality)
River Plaza (locality)
Rumson
Shadow Lake
Shrewsbury River
Swimming River
Upper Rocky Point

Approved

Charles E. Harrington

Charles E. Harrington
Chief Geographer
Nautical Chart Division

GEOGRAPHIC NAMES

FINAL NAME SHEET

CM-8107 (Navesink and Shrewsbury Rivers, New Jersey)

TP-01138 (Sheet A of A and B)

Atlantic Highlands
Atlantic Highlands Yacht Harbor
Atlantic Ocean
Blackberry Creek
Branchport
Branchport Creek
East Long Branch (locality)
Fort Monmouth Military Reservation
Galilee
Gooseneck Point
Gunning Island
Highlands
Hilton
Horseneck Point
Husky Brook
Leonardo
Leonardo Harbor
Little Silver
Little Silver Creek
Little Silver Point (locality)
Long Branch (locality)
Low Moor (locality)
Manhasset Creek
Many Mind Creek

Monmouth beach (locality)
North Long Branch (locality)
Oceanport
Oceanport Creek
Oyster Bay
Parkers Creek
Pleasure Bay
Plum Island
Port-au-Peck
Raccoon Island
Rumson
Sands Point (locality)
Sandy Hook
Sandy Hook Bay
Sea Bright
Sedge Island
Shadow Lake
Shrewsbury
Shrewsbury River
Spermaceti Cove
Town Neck Creek
Troutmans Creek
Wagner Creek
Waterwitch

Approved

Charles E. Harrington

Charles E. Harrington
Chief Geographer
Nautical Chart Division

Review Report
TP-01138
Shoreline Survey
April 1985

61. General Statement

A final review was performed for this shoreline map at the Washington Science Center, Rockville, Maryland, April 1985. For a complete analysis of TP-01138, refer to the Compilation Report bound with this Descriptive Report.

62. Comparison with Registered Topographic Survey - Not Applicable

63. Comparison with Map of Other Agencies

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

Sandy Hook, NJ-NY, 1:24,000 scale, 1954, photorevised 1970

Long Branch, NJ-NY, 1:24,000 scale, 1954, photorevised 1970

64. Comparison with Contemporary Hydrographic Surveys - Not Applicable

65. Comparison with Nautical Charts

A comparison was made with chart 12324, 1:40,000, 22nd Edition, February 11, 1984

66. Adequacy of Results and Future Surveys

This map complies with the project instruction and meet the National Standard of Map Accuracy.

Submitted by,

James Schud

Approved and Forwarded:

Robert A. Schud
Chief, Photogrammetric Section

Ronald K. Brewer
Chief, Photogrammetry Branch

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	<i>James Taylor</i>
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<i>James School</i>
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 (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 II. 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 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	III. 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.

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	<i>James Taylor</i>
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<i>James Taylor</i>
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 (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 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	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.				U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION				ORIGINATING ACTIVITY					
NONFLOATING AIDS OR LANDMARKS FOR CHARTS				LOCALITY NAVESINK RIVER & SHREWSBURY RIVER				DATE 12/15/83					
REPORTING UNIT (Field Party, Ship or Office)		STATE		LATITUDE		LONGITUDE		OFFICE		POSITION KEY QUALITY		CHARTS AFFECTED	
TO BE CHARTED ☒ TO BE REVISED ☐ TO BE DELETED		NEW JERSEY		D. M. Meters		D. P. Meters		81 Z(c) 8513 9/9/81		AEROTRIANGULATED		12324	
The following objects HAVE ☐ HAVE NOT ☒ been inspected from seaward to determine their value as landmarks.				DATUM NA-1927				METHOD AND DATE OF LOCATION (See instructions on reverse side)				CHARTS AFFECTED	
OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	LATITUDE		LONGITUDE		OFFICE		POSITION KEY QUALITY		CHARTS AFFECTED	
	CM-8107	TP-01138		D. M. Meters		D. P. Meters		81 Z(c) 8513 9/9/81		AEROTRIANGULATED		12324	
STANDPIPE				40 24		74 04		81 Z(c) 8513 9/9/81		AEROTRIANGULATED		12324	
MICRO TOWER				40 24		74 02		81 Z(c) 8522 9/9/81		AEROTRIANGULATED		12324	
BLDG				40 24		74 00		81 Z(c) 8522 9/9/81		AEROTRIANGULATED		12324	
CUPOLA			(HIGHLANDS SCHOOL 1934)	40 24		73 59		81 Z(c) 8522 9/9/81		GEODETTIC STATION		12324	
TOWER (ABAND LT HO)			(NAVESINK LIGHT SOUTH 1869)	40 23		73 59		81 Z(c) 8522 9/9/81		GEODETTIC STATION		12324	
SPIRE			(RUMSON HOLY CROSS SPIRE 1934)	40 22		73 58		81 Z(c) 8523 9/9/81		GEODETTIC STATION		12324	
SPIRE				40 20		74 03		81 Z(c) 8512 9/9/81		MANUALLY DIGITIZED		12324	
TANK			(LONG BRANCH J C P & L CO GAS TANK 1934)	40 18		73 59		81 Z(c) 8525 9/9/81		GEODETTIC STATION		12324	
STACK			(LONG BRANCH J C P & L CO CONCRETE STACK 1934)	40 18		73 59		81 Z(c) 8525 9/9/81		GEODETTIC STATION		12324	
TOWER				40 18		73 59		81 Z(c) 8526 9/9/81		AEROTRIANGULATED		12324	

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	<i>James Taylor</i>
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<i>James School</i>
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' (Consult Photogrammetric Instructions No. 64.)	

OFFICE	FIELD (Cont'd)
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	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	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 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	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.

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	<i>James Taylor</i>
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<i>James School</i>
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 (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 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	II. TRIANGULATION STATION RELUVERED 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.

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	<i>James Taylor</i>
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<i>James School</i>
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 (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 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	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.

10/83

MAP FEATURE OF POSSIBLE LANDMARK VALUE

MAP NO. TP-01138	JOB NO. CM-8107	GEOGRAPHIC AREA NAVESINK RIVER and SHREWSBURY RIVER	GEODETIC DATUM NA-1927	ORIGINATING ACTIVITY PHOTOGRAMMETRY BRANCH: ROCKVILLE	
CHARTING NAME	DESCRIPTION	PHOTO NO. Date of Photo	PLANE COOR. (FT) STATE New Jersey ZONE	GEOGRAPHIC POSITION φ LATITUDE λ LONGITUDE	POSITION QUALITY
Tower		81 Z(C) 8522 9/9/81	X 2,181,654.49 Y 564,503.55	φ 40 22 52.62 λ 74 00 52.71	AEROTRIANGULATED
Tower		81 Z(C) 8522 9/9/81	X 2,181,750.35 Y 564,451.27	φ 40 22 52.10 λ 74 00 51.47	AEROTRIANGULATED
Cupola		81 Z(C) 8523 9/9/81	X 2,185,257.53 Y 560,051.67	φ 40 22 08.36 λ 74 00 06.58	AEROTRIANGULATED
Flagpole		81 Z(C) 8510 9/9/81	X 2,175,836.16 Y 541,096.84	φ 40 19 01.74 λ 74 02 10.04	AEROTRIANGULATED
Tank		81 Z(C) 8510 9/9/81	X 2,173,627.08 Y 539,328.54	φ 40 18 44.42 λ 74 02 38.72	AEROTRIANGULATED
Tower		81 Z(C) 8525 9/9/81	X 2,188,710.06 Y 537,009.15	φ 40 18 20.41 λ 73 59 24.26	AEROTRIANGULATED
Tank		81 Z(C) 8515 9/9/81	X 2,172,542.80 Y 577,722.90	φ 40 25 03.89 λ 74 02 49.24	DIGITIZED ON LINE
Tank		81 Z(C) 8514 9/9/81	X 2,177,483.10 Y 571,823.20	φ 40 24 05.25 λ 74 01 45.92	DIGITIZED ON LINE
			X Y	φ λ	
			X Y	φ λ	
			X Y	φ λ	
			X Y	φ λ	
			X Y	φ λ	

NOTE: The objects have not been inspected from seaward to determine their value as landmarks.

LISTED BY James Taylor	DATE 5/82	LISTING CHECKED BY James School	DATE 5/82
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NOTE: The objects have not been inspected from seaward to determine their value as landmarks.

LISTED BY	DATE	LISTING CHECKED BY	DATE
Tamara Taylor	5/82	Tamara School	5/82