

TP - 00354

TP-00354

NOAA FORM 76-35 (6-80)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
THIS MAP EDITION WILL NOT BE FIELD EDITED	
Map No. TP-00354	Edition No. 1
Job No. CM-8412	
Map Classification CLASS III (FINAL)	
Type of Survey SHORELINE	
LOCALITY	
State MICHIGAN	
General Locality SAINT MARYS RIVER	
Locality EAST NEEBISH ISLAND	
19 84 TO 19	
REGISTERED IN ARCHIVES	
DATE	

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED		SURVEY TP-00354 MAP EDITION NO. (1) MAP CLASS III (Final) JOB RM-CM-8412	
DESCRIPTIVE REPORT - DATA RECORD							
PHOTOGRAMMETRIC OFFICE Coastal Mapping Unit Atlantic Marine Center, Norfolk, Virginia				LAST PRECEDING MAP EDITION			
OFFICER-IN-CHARGE A. Y. Bryson, CDR				TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED		JOB PH- MAP CLASS SURVEY DATES: 19__ TO 19__	
I. INSTRUCTIONS DATED							
1. OFFICE				2. FIELD			
Aerotriangulation October 18, 1984 Compilation April 15, 1985				Horizontal Control April 19, 1984 (Premarking)			
II. DATUMS							
1. HORIZONTAL: <input checked="" type="checkbox"/> 1927 NORTH AMERICAN				OTHER (Specify)			
2. VERTICAL: <input type="checkbox"/> MEAN HIGH-WATER <input type="checkbox"/> MEAN LOW-WATER <input type="checkbox"/> MEAN LOWER LOW-WATER Water level <input type="checkbox"/> MEAN SEA LEVEL				OTHER (Specify)			
3. MAP PROJECTION Transverse Mercator Projection				4. GRID(S) STATE ZONE Michigan East			
5. SCALE 1:20,000				STATE ZONE			
III. HISTORY OF OFFICE OPERATIONS							
OPERATIONS				NAME		DATE	
1. AEROTRIANGULATION BY				L. Harrod, Jr.		Jan. 1985	
METHOD: Analytic LANDMARKS AND AIDS BY				L. Harrod, Jr.		Jan. 1985	
2. CONTROL AND BRIDGE POINTS PLOTTED BY				W. McLemore, Jr.		Mar. 1985	
METHOD: Xynetics 1201 CHECKED BY				W. McLemore, Jr.		Mar. 1985	
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY				R. Kravitz		Apr. 1985	
COMPIATION CHECKED BY				W. McLemore, Jr.		Apr. 1985	
INSTRUMENT: Wild B-8 CONTOURS BY				N.A.			
SCALE: 1:20,000 CHECKED BY				N.A.			
4. MANUSCRIPT DELINEATION PLANIMETRY BY				R. Kravitz		May 1985	
METHOD: Smooth drafted CHECKED BY				W. McLemore, Jr.		May 1985	
SCALE: 1:20,000 CONTOURS BY				N.A.			
HYDRO SUPPORT DATA BY				N.A.			
CHECKED BY				N.A.			
5. OFFICE INSPECTION PRIOR TO FINAL Final Review BY				W. McLemore, Jr.		May 1985	
6. APPLICATION OF FIELD EDIT DATA BY				N.A.			
CHECKED BY				N.A.			
7. COMPIATION SECTION REVIEW Class III BY				W. McLemore, Jr.		May 1985	
8. FINAL REVIEW Class III BY				J. Hancock		June 1985	
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY				J. Hancock		July 1985	
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY				P. Dempsey		SEPT. 1985	
11. MAP REGISTERED - COASTAL SURVEY SECTION BY				E. L. DAUGHERTY		SEP 1985	

TP-00354
COMPILATION SOURCES

1. COMPILATION PHOTOGRAPHY

CAMERA(S) Wild R.C. 10 (Z) (Z = 153.15mm) Wild R.C. 10 (Z) (Z = 153.15mm) Water level gage		TYPES OF PHOTOGRAPHY LEGEND (C) COLOR (P) PANCHROMATIC (I) INFRARED		TIME REFERENCE ZONE Eastern MERIDIAN 75th <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> DAYLIGHT	
<input type="checkbox"/> PREDICTED TIDES <input checked="" type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY					
NUMBER AND TYPE	DATE	TIME	SCALE	* STAGE OF river <u>Level</u>	
84Z(P) 3744-3748	5-16-84	09:09	1:40,000	579.53 feet	
84Z(P) 3772-3776	5-16-84	09:28	1:40,000	579.53 feet	

REMARKS

*Water level at the time of photography is indicated as recorded from the DeTour Village, Michigan gage.

2. SOURCE OF MEAN HIGH-WATER LINE:

The term "Mean High Water Line" is not applicable. The shoreline is defined as the visible line of contact on the photographs between land and water. Delineation of the shoreline was derived by photo-interpretation of the above listed black-and-white compilation/bridging photographs.

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

This item is not applicable to the project.

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
No survey	No survey	TP-00357	TP-00353

REMARKS

TP-00354

HISTORY OF FIELD OPERATIONS

I. ☒ FIELD ~~INSPECTION~~ OPERATION (Premarking) ☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J. Dunford	May 1984
2. HORIZONTAL CONTROL	RECOVERED BY R. James	Apr/May 84
	ESTABLISHED BY R. James	Apr/May 84
	PRE-MARKED OR IDENTIFIED BY R. James	Apr/May 84
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 <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY BY <input checked="" type="checkbox"/> NO INVESTIGATION	
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

Premarked (paneled)

2. VERTICAL CONTROL IDENTIFIED

None

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
84Z(P) 3747	REFERENCE MONUMENT 16 (IBC), 1911 (Paneled direct)		
84Z(P) 3774	HOME (9598) (CHS), 1981 (Field position) (Paneled direct and sub point paneled)		

3. PHOTO NUMBERS (Clarification of details)

N.A.

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 76-53 (CSI Cards)

1 Form 75-63

Project Field Report

TP-00354

HISTORY OF FIELD OPERATIONS

- I. ☒ FIELD INSPECTION OPERATION ☐ FIELD EDIT OPERATION
(Photoidentification)

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J. Shea	Sept. 1982
2. HORIZONTAL CONTROL	R. Norton	Sept. 1982
RECOVERED BY	N.A.	
ESTABLISHED BY	N.A.	
PRE-MARKED OR IDENTIFIED BY	M. Mozgala	Sept. 1982
3. VERTICAL CONTROL	N.A.	
RECOVERED BY	N.A.	
ESTABLISHED BY	N.A.	
PRE-MARKED OR IDENTIFIED BY	N.A.	
4. LANDMARKS AND AIDS TO NAVIGATION	N.A.	
RECOVERED (Triangulation Stations) BY	N.A.	
LOCATED (Field Methods) BY	N.A.	
IDENTIFIED BY	N.A.	
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	N.A.
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	N.A.

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED		2. VERTICAL CONTROL IDENTIFIED	
Photoidentified		None	
PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
82C(C) 3449	55 USLS=SUGAR ISLAND EAST BASE, 1878 (Sub point A)		

3. PHOTO NUMBERS (Clarification of details)

N.A.

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)

1 Form 76-53 (CSI Card)

2 Forms 75-65

NOTE: This data determined as
part of Project CM-7806.

1 Form 76-86

3 Forms 75-63

2 Forms 76-170

1 Form 76-135

TP-00354
RECORD OF SURVEY USE

I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Compilation complete	May 1985	Class III Manuscript	None	None
Final Review, Class*III	June 1985	Final Class III Map	8-9-85	8-9-85

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

NUMBER (Pages)	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
4		8-9-85	Landmarks and Aids to navigation for charting

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

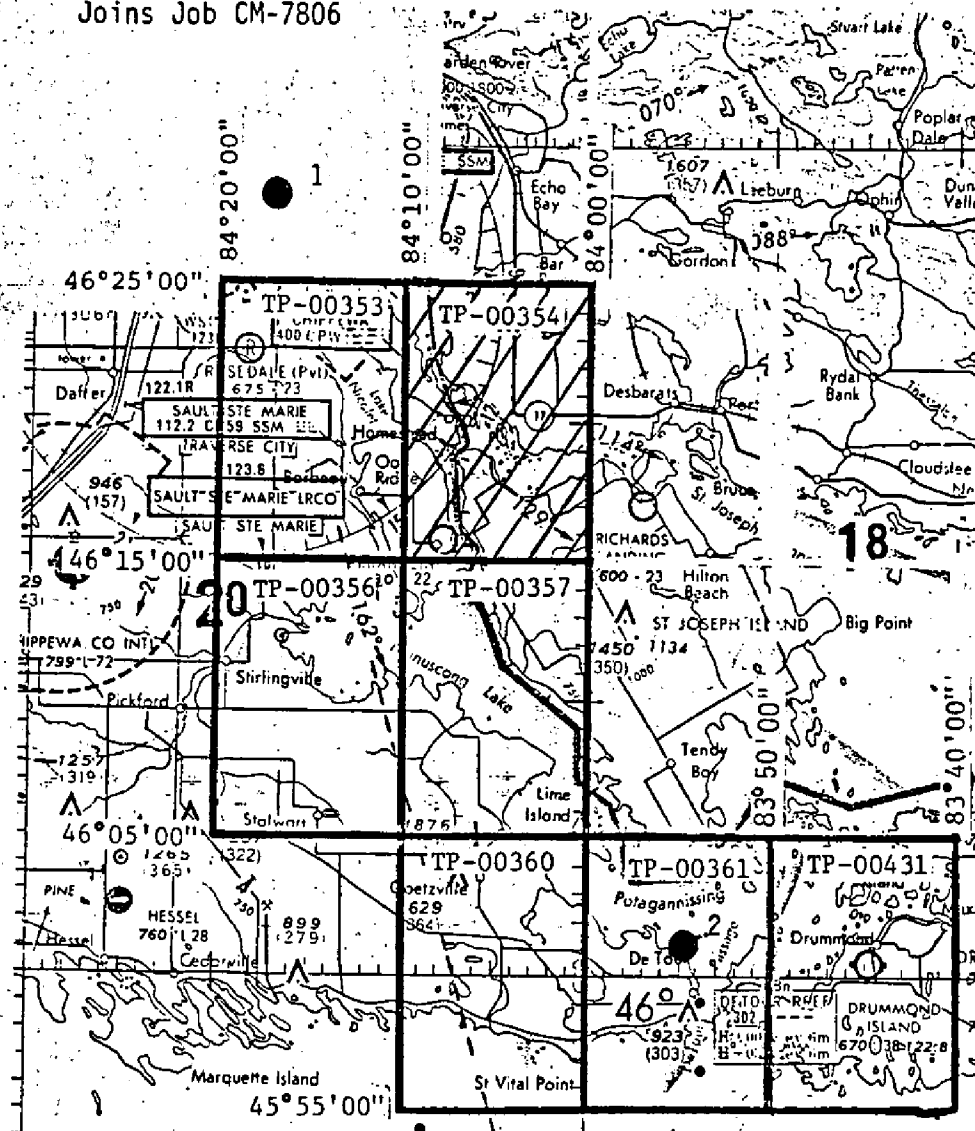
1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 76-40 ~~207~~ SUBMITTED BY FIELD PARTIES.
3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
ACCOUNT FOR EXCEPTIONS:

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 <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	

Joins Job CM-7806



● = Water Level Gage Site

- 1 - Frechette Point
- 2 - Detour Village

JOB CM-8412
 SAINT MARYS RIVER
 SUGAR ISLAND TO POTAGANNISSING BAY
 MICHIGAN
 SHORELINE MAPPING
 SCALE 1:20,000

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

TP-00354

This 1:20,000 scale final Class III shoreline map is one of 7 maps (TP-00353, TP-00354, TP-00356, TP-00357, TP-00360, TP-00361, and TP-00431) that comprise project CM-8412, Sugar Island to Potagannissing Bay, St. Marys River, Michigan. This project junctions with a previous project, CM-7806, which features the northern region of St. Marys River.

This map features shoreline along the southern tip of Sugar Island and the northwest region of St. Joseph Island.

The purpose of this map is to provide current charting information for nautical chart maintenance and to furnish shoreline support data for hydrographic survey operations.

Field work prior to photography was adequately provided in May 1984. This involved the recovery, establishment and identification (premarking) of horizontal control necessary for aerotriangulation. There was no field inspection performed.

Photo coverage was adequately provided by 1:40,000 scale panchromatic photography taken May 16, 1984 with the Wild RC-10(Z) camera. At the time of photography, a water level reading of 579.53 was recorded at the DeTour Village, Michigan gage. This established the shoreline datum for the map based on the 1955 International Great Lakes Datum.

Analytic aerotriangulation was adequately provided by the Washington Science Center in January 1985. Included in the bridge are two supplemental horizontal control substations previously photoidentified for adjoining project CM-7806. Aerotriangulation activity also included determining ratio values for the photographs and locating some of the visible navigational aids.

Compilation was performed at the Coastal Mapping Unit, Atlantic Marine Center in May 1985. Delineation of map detail was accomplished using stereo instrument methods based upon interpretation of the mapping photographs.

Final review was performed at the Atlantic Marine Center in June 1985. A Chart Maintenance Print was prepared and forwarded to the Marine Chart Branch. Also, a Notes to Hydrographer Print was prepared for future hydrographic activity.

This Descriptive Report contains all pertinent information used to compile this final Class III Map. The original base manuscript and related data were forwarded to the Washington Science Center for final registration.

7

FIELD INSPECTION

TP-00354

There was no field inspection prior to compilation. Field work accomplished consisted of aerial photography and the recovery, establishment, and identification (premarking) of horizontal control necessary for aerotriangulation.

PHOTOGRAMMETRIC PLOT REPORT
CM-8412
Saint Marys River, Michigan
January 1985

21. Area Covered

The area covered by this report is in the vicinity of the Saint Marys River from Sugar Island Southeastward to Potagannissing Bay, Michigan. It is covered by seven 1:20,000-scale manuscripts; TP-00353, TP-00354, TP-00356, TP-00357, TP-00360, TP-00361, and TP-00431.

22. Method

Eight strips of 1:40,000-scale photographs were bridged by analytic aerotriangulation methods and adjusted to ground on the Michigan State Plane Coordination System, Michigan East Zone, using our Analytic Strip Adjustment program. Panchromatic control was provided. Aids and landmarks were located on bridging photographs. Ratio values were determined for the 1:40,000-scale bridging photographs. A magnetic tape for plotting points and for ruling the base manuscripts were prepared. The Traverse Mercator projection was used.

23. Adequacy of Control

The horizontal control provided, proved to be adequate, was sparse in some areas. Tie points were used to supplement these areas. DIKE 387, 1984 Horizontal Panel No. 4 would not fit with the tie points and control points of the adjacent strip. The lack of fit is -19.86 feet in X and 6.51 feet in Y. It was not used in the adjustment. All positions established by aerotriangulation methods meet the National Standards of Map Accuracy.

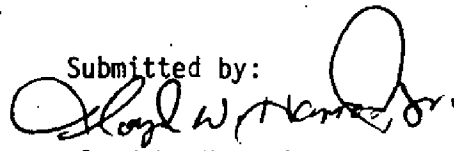
24. Supplemental Data

Vertical control was taken from USGS quads.

25. Photography

The coverage and quality of the photographs proved adequate for the project in most cases. The end lap in model 3810-3811 in strip 7 was computed to be about 51 percent, which is below the desired amount. This made it difficult to select and read pass points in some areas.

Submitted by:


Lloyd W. Harrod, Jr.

Approved and Forwarded:


Don O. Norman
Chief, Aerotriangulation Unit

Saint Marys River
Michigan
CM-8412

Fit to Control -X and Y in Feet

<u>STRIP 1</u>		<u>PT. NO.</u>	<u>X</u>	<u>Y</u>
2	Home CHS(9598) 1981 Horizontal Panel No. 2	(774100)	-1.2	7.5
Δ 2A	" " " " Sub. Sta. A	(774101)	-1.6	7.7
Δ 12A	55 USLS - Sugar Island East Base 1878	(773101)	-3.5	3.9
	Tie from Strip 2	(742801)	1.6	0.4
	Tie " " "	(744801)	-0.1	-3.9
	Tie " " "	(745801)	1.2	-2.8
	Tie " " "	(746801)	0.6	-2.2
	Tie " " "	(747801)	0.1	-2.8
	Tie " " "	(748801)	2.7	-0.6
	Tie " " "	(749801)	-0.7	0.3
	Tie " " "	(750801)	0.5	-1.1
	Tie " " "	(751801)	-0.7	1.0
<u>STRIP 2</u>				
Δ 1	Cass 1943	(739100)	-0.1	-0.6
Δ 3	Ref. Mon. 16, 1911	(747100)	-0.5	3.4
Δ 5	Kolos 1984	(752100)	-0.1	-4.4
Δ 6	Ramp 1984	(755100)	-3.1	-0.1
	Tie from Strip 6	(793803)	2.8	1.6
<u>STRIP 3</u>				
	Tie from Strip 2	(748804)	-1.2	-0.8
	Tie " " "	(746804)	1.7	1.0
	Tie " " "	(745805)	-0.2	0.9
	Tie " " "	(744805)	0.5	-2.4
	Tie " " "	(743801)	1.0	-0.9
	Tie " " "	(742804)	-2.1	-1.6
	Tie " " "	(741805)	-1.0	5.8
	Tie " " "	(740801)	1.3	-2.1
<u>STRIP 4</u>				
	Tie from Strip 6	(792303)	0.5	-3.4
	Tie " " "	(792802)	1.0	-4.4
	Tie " " 2	(713802)	-4.2	5.0
	Tie " " "	(714801)	-1.1	2.0
	Tie " " "	(715801)	1.7	0.9
	Tie " " "	(716801)	1.5	0.4
	Tie " " "	(717801)	1.2	0.8
	Tie " " "	(718802)	-1.2	-0.7
	Tie " " "	(719801)	-1.8	-0.7

STRIP 5

	Tie from Strip 3	(721801)	-0.5	0.3
	Tie " " "	(722801)	0.4	-0.4
	Tie " " "	(719804)	1.0	-0.6
	Tie " " "	(720801)	-0.9	0.7
4	Dike 387, 1984	(700100)	-19.9	6.5

STRIP 6

Δ 7	McKay 1984	(788100)	-0.6	-0.0
Δ 8	Tour 1980	(793100)	3.8	-0.1
8A	Tour 1980 Sub Pt. A	(793110)	3.8	-0.8
	Tie from Strip 7	(811803)	1.4	1.6
	Tie " " "	(813801)	-1.1	-3.5
	Tie " " "	(815801)	-2.7	-1.0
	Tie " " "	(818801)	-2.4	1.9
	Tie " " "	(818803)	-2.3	2.1

STRIP 7

Δ 11	Clear 388 1984	(809100)	0.3	-0.1
Δ 10	Marina 1984	(813100)	-1.3	0.2
Δ 9	State 1984	(815100)	1.5	0.3
Δ 6	Ramp 1984	(818100)	-0.4	-0.1

STRIP 8

	Tie from Strip 7	(811805)	0.2	0.2
	Tie " " "	(813804)	0.7	-0.2
	Tie " " "	(816804)	-3.2	-1.0
	Tie " " "	(817806)	2.0	-1.2
	Tie " " "	(817807)	1.7	0.1
	Tie " " "	(817808)	-0.7	2.0

Δ Stations held in the strip adjustments

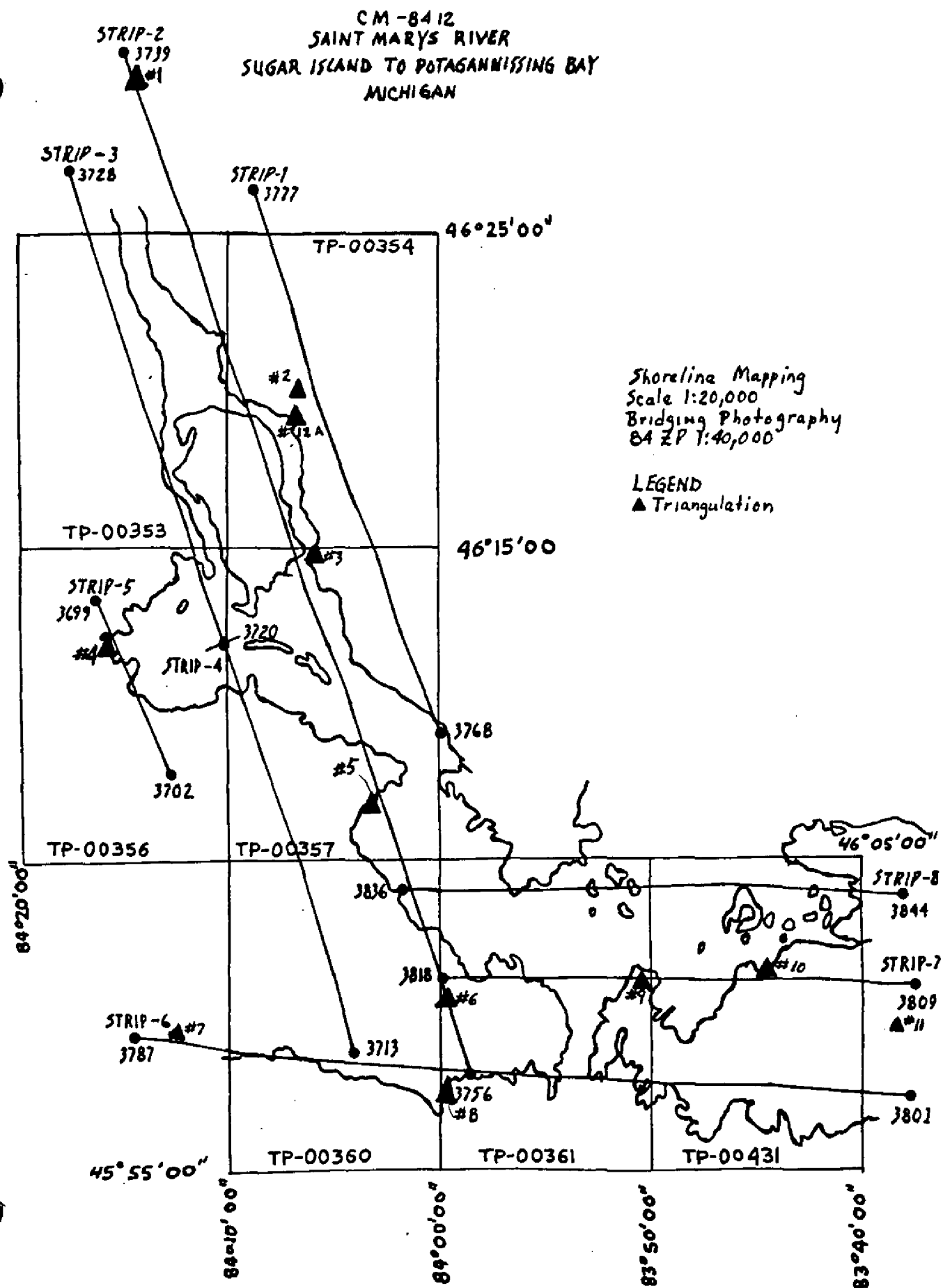
Saint Marys River, Michigan

CM-8412

January 1985

Ratio values for 1:40,000 scale, black and white bridging
photographs.

84 ZP 3768-3777	x2.03
3739-3756	x2.03
3720-3728	x2.03
3713-3720	x2.04
3699-3702	x2.05
3790-3801	x2.04
3811-3818	x2.04
3836-3844	x2.04



DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	JOB NO.	SOURCE OF INFORMATION (Index)	AEROTRIANGULATION POINT NUMBER	GEODETTIC DATUM		GEOGRAPHIC POSITION		REMARKS
				COORDINATES IN FEET STATE <u>Michigan</u> ZONE <u>East</u>	ϕ LATITUDE λ LONGITUDE			
TP-00354	CM-8412	HOME CHS (9598), 1981 (field position)	2	X=	ϕ 46 20 06.017	Unit, AMC, Norfolk, VA	Coastal Mapping	
				Y=	λ 84 07 07.886			
REFERENCE MONUMENT 16 (IBC), 1911	Project Control Record Bk	3		X=	ϕ 46 15 17.354			
				Y=	λ 84 06 07.656			
55 USLS = SUGAR ISLAND EAST BASE, 1878	CM-7806 Field Notebook			X=	ϕ 46 19 19.838			
				Y=	λ 84 06 53.783			
				X=	ϕ			
				Y=	λ			
				X=	ϕ			
				Y=	λ			
				X=	ϕ			
				Y=	λ			
				X=	ϕ			
				Y=	λ			
				X=	ϕ			
				Y=	λ			
				X=	ϕ			
				Y=	λ			
COMPUTED BY				COMPUTATION CHECKED BY		DATE	DATE	
LISTED BY				LISTING CHECKED BY		DATE	DATE	
HAND PLOTTING BY				HAND PLOTTING CHECKED BY		DATE	DATE	

COMPILATION REPORT
TP-00354
CM-8412

31 - DELINEATION

Delineation was accomplished using stereo instrument compilation methods. Instrument compilation was used to delineate shoreline, alongshore and interior detail based upon office interpretation of the 1:40,000 scale bridging/compilation black-and-white photographs. All photographs used to compile this map are listed on NOAA form 76-36B. The photography was adequate except for incomplete coverage of St. Joseph Channel to the eastern limit of the map.

32 - CONTROL

The horizontal control was adequate. Refer to the Photogrammetric Plot Report, dated January 1985.

33 - SUPPLEMENTAL DATA

The following Canadian Chart was used for general reference: 2288, 4th edition, dated January 25, 1985, scale 1:36,435.

34 - CONTOURS AND DRAINAGE

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

35 - SHORELINE AND ALONGSHORE DETAIL

The shoreline and alongshore details were compiled from office interpretation of the photographs. The shoreline compiled was the visible line of contact between land features and the water surface at the time of photography. Based on the International Great Lakes Datum (1955) the water level taken at DeTour Village, Michigan gage was 579.53 feet.

36 - OFFSHORE DETAILS

Offshore details were compiled by instrument methods as described in item #31.

37 - LANDMARKS AND AIDS

There are 2 landmarks and 30 aids within the mapping limits of this manuscript. Among these, both landmarks and 27 aids were located photogrammetrically. Two of the aids, Point of Woods Range Front Light and Point of Woods Range Front Passing Light are located on the same structure.

Appropriate information was prepared on the 76-40 forms and submitted with this map.

TP-00354

38 - CONTROL FOR FUTURE SURVEYS

None.

39 - JUNCTIONS

Refer to the Data Record Form 76-36B, Item 5 of the Descriptive Report.

40 - HORIZONTAL AND VERTICAL ACCURACY

See item #32.

46 - COMPARISON WITH EXISTING MAPS

A comparison was made with the following U.S. and Canadian Quadrangles:

Lake George, Michigan, dated 1951, scale 1:62,500

Oak Ridge, Michigan-Ontario, dated 1951, photorevised 1976, scale 1:24,000

Baie De Wasai, Michigan-Ontario, dated 1951, photorevised 1976, scale 1:24,000

Sault Ste Marie, Canada-U.S.A., 41k, dated 1977, scale 1:250,000.

47 - COMPARISON WITH NAUTICAL CHARTS

A comparison was made with the following NOS charts:

14883, 35th edition, dated December 13, 1980, scale 1:40,000

14860, 29th edition, dated March 10, 1984, scale 1:500,000.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.

ITEMS TO BE CARRIED FORWARD

None.

Submitted by:

Robert R. Kravitz
Robert R. Kravitz
Cartographic Technician
May 2, 1985

Approved:

James L. Byrd, Jr.

James L. Byrd, Jr.
Chief, Coastal Mapping Unit

10
JUL 10 1985

GEOGRAPHIC NAMES

FINAL NAME CHART

CM-8412 (St. Marys River, Michigan)

TP-00354

Advance Island
Almon Island
Arthur Island
Birch Point
Boulanger Point
Bowen Island
Chicken Islands
Coyle Point
Duck Island
Duck Lake
Duval Island
East Neebish Channel
East Neebish Island
Elisha Point
Empire Ledge
Field Point
Foote Island
Forshaw Island *gdt*
Gaffney Island
Green Point
Harwood Point
Hattie Island
Hen Island
Homestead
Horse Island
Indian Point
Iron Island
Johnson Point
Kerby Island
Lake George
Leonard Reef
Pumpkin Point *gdt*

Long Point
McGregor Bay
Maskinonge Bay
Maskinonge (Pine) Island
Mayo Island
Middle Neebish Channel
Mirre Point
Munuscong Channel
Nanton Reef
Ned Point
Neebish
Neyland Island
Niles Point
Rains Island
Reed Point
Richards Landing (locality)
Rock Island
Saint Joseph Channel
Saint Joseph Island
Saint Marys River
Sankey Island
Shewfelt Creek
Shoal Islands
Stribling Point
Sugar Island
Sutton Island
Thorne Island
Toolie Island
Watson Island
Whitestone Reef

Approved by:

Charles E. Harrington

Charles E. Harrington
Chief Geographer
Nautical Charting Division

REVIEW REPORT
TP-00354
SHORELINE

61 - GENERAL STATEMENT

Refer to the Summary included in this Descriptive Report.

62 - COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

Not applicable.

63 - COMPARISON WITH MAPS OF OTHER AGENCIES

A comparison was made with the following U.S. and Canadian quadrangles:
Oak Ridge, Michigan-Ontario, dated 1951, photorevised 1976, scale 1:24,000
Baie De Wasai, Michigan-Ontario, dated 1951, photorevised 1976, scale 1:24,000
Lake George, Michigan, dated 1951, scale 1:62,500
Sault Ste Marie, Canada-U.S.A., 41k, dated 1977, scale 1:250,000.

64 - COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

No contemporary hydrographic survey was conducted prior to this shoreline mapping project.

65 - COMPARISON WITH NAUTICAL CHARTS

A comparison was made with NOS chart 14883, scale 1:40,000, 35th edition, dated December 1980.

This most current chart is outdated and in numerous areas there are significant shoreline discrepancies with the map. Also there are several variations between the charted nonfloating navigational aids and the descriptions in the 1985 U.S. Coast Guard Light List. These discrepancies were addressed on the Chart Maintenance Print.

66 - ADEQUACY OF RESULTS AND FUTURE SURVEYS

This map complies with the Project Instructions, and meets the requirements for National Standards of Map Accuracy.

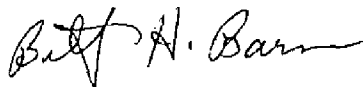
Submitted by:

Jerry L. Hancock

Jerry L. Hancock
Final Reviewer

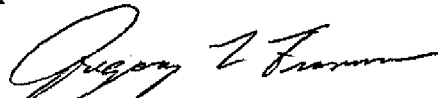
TP-00354

Approved for forwarding:



Billy H. Barnes
Chief, Photogrammetric Section, AMC

Approved:



Chief, Photogrammetric Operations,
Rockville



Chief, Photogrammetry Branch,
Rockville

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	Robert R. Kravitz
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 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 P - Photogrammetric 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	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				NONFLOATING AIDS OR LANDMARKS FOR CHARTS				ORIGINATING ACTIVITY			
TO BE CHARTED <input checked="" type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED		REPORTING UNIT (Field Party, Ship or Office) Coastal Mapping Unit AMC, Norfolk, VA		STATE Michigan		LOCALITY St. Marys River		DATE May 1985		<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 CRP. <input type="checkbox"/> COAST PILOT BRANCH (See reverse for responsible personnel)					
OPR PROJECT NO.		JOB NUMBER CM-8412		SURVEY NUMBER TP-00354		DATUM N.A. 1927		METHOD AND DATE OF LOCATION (See instructions on reverse side)				CHARTS AFFECTED #14883, 35th edition			
CHARTING NAME		DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)		LATITUDE ° / ' " D.M. Meters		LONGITUDE ° / ' " D.P. Meters		OFFICE		FIELD					
DAYBEACON	Dark Hole East Range Rear Daybeacon	46 15	84 06	54.1		84Z(P) 3747	5-16-84					14883			
LIGHT	Point of Woods Range Front Light (and) Point of Woods Range Front Passing Light	46 16	84 07	13.5		84Z(P) 3747	5-16-84					14883			
LIGHT	Point of Woods Range Rear Light	46 16	84 07	16.9		84Z(P) 3747	5-16-84					14883			
LIGHT	Stribling Point Upbound Range Front Light	46 18	84 06	55.3		84Z(P) 3745	5-16-84					14883			
LIGHT	Stribling Point Upbound Range Rear Light	46 18	84 06	13.6		84Z(P) 3745	5-16-84					14883			
DAYBEACON	Stribling Point Front (Not in U.S. or Canadian Light Lists)	46 18	84 06	55.1		84Z(P) 3745	5-16-84					14883			
DAYBEACON	Stribling Point Rear (Not in U.S. or Canadian Light Lists)	46 18	84 06	13.3		84Z(P) 3745	5-16-84					14883			
LIGHT	Shoal Island Light	46 18	84 04	32.4		84Z(P) 3773	5-16-84					14883			
LIGHT	Harwood Point West Range Front Light	46 19	84 07	15.0		84Z(P) 3745	5-16-84					14883			
LIGHT	Harwood Point West Range Rear Light	46 19	84 07	15.7		84Z(P) 3745	5-16-84					14883			

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	Robert R. Kravitz
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 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 P - Photogrammetric L - Located Vis - Visually V - Verified 1 - Triangulation 5 - Field identified 2 - Traverse 6 - Theodolite 3 - Intersection 7 - Planetable 4 - Resection 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	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.						
NONFLOATING AIDS OR LANDMARKS FOR CHARTS						
REPORTING UNIT <small>(If field party, ship or office)</small> Coastal Mapping Unit AMC, Norfolk, VA		STATE Michigan	LOCALITY St. Marys River	DATE May 1985	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
<input checked="" type="checkbox"/> TO BE CHARTED	<input type="checkbox"/> TO BE REVISED	<input type="checkbox"/> TO BE DELETED	HAVE <input type="checkbox"/>	HAVE NOT <input checked="" type="checkbox"/>	be inspected from seaward to determine their value as landmarks. DATUM N.A. 1927	
JOB NUMBER CM-8412	SURVEY NUMBER TP-00354					
CHARTING NAME	DESCRIPTION <small>(Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)</small>	DATUM	LATITUDE ° / '	LONGITUDE ° / '	METHOD AND DATE OF LOCATION <small>(See instructions on reverse side)</small>	CHARTS AFFECTED #14883, 35th edition
DAYBEACON	Harwood Point East Range - Front Daybeacon	46 19'	17.1 - D.M. Meters	84 07' D.P. Meters	84Z(P) 3745 - 5-16-84	14883
DAYBEACON	Harwood Point East Range - Rear Daybeacon	46 19'	26.9 - D.M. Meters	84 07' D.P. Meters	84Z(P) 3745 - 5-16-84	14883
LIGHT	Middle Neebish Channel Light 50'	46 19'	24.5 - D.M. Meters	84 08' D.P. Meters	84Z(P) 3745 - 5-16-84	14883
LIGHT	Middle Neebish Channel Light 54'	46 19'	35.5 - D.M. Meters	84 09' D.P. Meters	84Z(P) 3745 - 5-16-84	14883
LIGHT	Munuscong Channel Light 39'	46 18'	33.5 - D.M. Meters	84 07' D.P. Meters	84Z(P) 3745 - 5-16-84	14883
LIGHT	Hen Island Winter Light	46 18'	39.8 - D.M. Meters	84 07' D.P. Meters	84Z(P) 3746 - 5-16-84	14883

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	Robert R. Kravitz
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
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 P - Photogrammetric L - Located Vis - Visually V - Verified 1 - Triangulation 5 - Field identified 2 - Traverse 6 - Theodolite 3 - Intersection 7 - Planetable 4 - Resection 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	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 II. 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.	

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	Robert R. Kravitz
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) 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
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 *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.

