

TP-01344

TP-01344

NOAA FORM 76-35  
(6-80)U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

## DESCRIPTIVE REPORT

Map No.	TP-01344	Edition No.	1
Job No.	CM-8415		
Map Classification	III		
Type of Survey	Shoreline		
LOCALITY			
State	Michigan		
General Locality	Eagle Harbor to Traverse Point, Lake Superior		
Locality	Agate Harbor		
This map will not be field edited.			
19 85 TO 19			
REGISTERED IN ARCHIVES			
DATE			

## DESCRIPTIVE REPORT

TP-01344

### TABLE OF CONTENTS

NOAA Form 76-36A, DESCRIPTIVE REPORT - DATA RECORD	..... 1
NOAA Form 76-36B, COMPILATION SOURCES	..... 2
NOAA Form 76-36C, HISTORY OF FIELD OPERATIONS	..... 3
NOAA Form 76-36D, RECORD OF SURVEY USE	..... 4
PROJECT DIAGRAM	..... 5
SUMMARY	..... 6
FIELD OPERATIONS REPORT	..... 8
AEROTRIANGULATION REPORT	..... 9
NOAA Form 76-41, DESCRIPTIVE REPORT CONTROL RECORD	.....17
COMPILATION REPORT	.....18
REVIEW REPORT	.....20
GEOGRAPHIC NAMES, FINAL NAMES SHEET	.....21
INDEX TO PROJECT DATA AND MATERIAL ON FILE	.....22
FORM C&GS-8352, RECORD OF APPLICATION TO CHARTS	.....23

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.	
<b>DESCRIPTIVE REPORT - DATA RECORD</b>		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	
PHOTOGRAMMETRIC OFFICE Photogrammetry Branch, Rockville, Maryland		SURVEY TP-01344 MAP EDITION NO. (1) MAP CLASS III JOB PH-CM-8415	
OFFICER-IN-CHARGE  CDR A. Y. Bryson, NOAA		LAST PRECEDING MAP EDITION 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 11/14/85  OFFICE 11/25/85		FIELD 3/08/85	
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 <input type="checkbox"/> MEAN SEA LEVEL		OTHER (Specify) International Great Lakes Datum (1955) for Lake Superior / IGLD (1955)	
3. MAP PROJECTION  Lambert Conformal Conic		4. GRID(S) STATE Michigan ZONE North	
5. SCALE  1:20,000		STATE ZONE	
III. HISTORY OF OFFICE OPERATIONS			
OPERATIONS		NAME	DATE
1. AEROTRIANGULATION BY METHOD: Analytical LANDMARKS AND AIDS BY		Brian Thornton	2/86
2. CONTROL AND BRIDGE POINTS PLOTTED BY METHOD: Automated Plotter(Xynetics) CHECKED BY		N/A Fay Mauldin	9/86
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY INSTRUMENT: Wild B-8 SCALE: 1:20,000 CHECKED BY		David Butler J. Richard Minton N/A N/A	12/86 12/86
4. MANUSCRIPT DELINEATION PLANIMETRY BY CHECKED BY CONTOURS BY CHECKED BY METHOD: Smooth Drafting HYDRO SUPPORT DATA BY SCALE: 1:20,000 CHECKED BY		David Butler Robert Rodkey N/A N/A N/A N/A	4/87 5/87
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		N/A	
6. APPLICATION OF FIELD EDIT DATA BY CHECKED BY		N/A N/A	
7. COMPILATION SECTION REVIEW BY		Robert Rodkey	5/87
8. FINAL REVIEW BY		Robert Rodkey	6/87
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		Robert Rodkey	7/87
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		Gregory Fromm	9/87
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		JOAN RIKON	10/87

## COMPILATION SOURCES

TP-01344

## 1. COMPILATION PHOTOGRAPHY

## CAMERA(S)

Wild RC-8(E); CFL = 152.71mm

## TIDE STAGE REFERENCE

- ☐ PREDICTED TIDES  
☒ REFERENCE STATION RECORDS  
☐ TIDE CONTROLLED PHOTOGRAPHY

TYPES OF PHOTOGRAPHY  
LEGEND

- (C) COLOR  
(P) PANCHROMATIC  
(I) INFRARED

## TIME REFERENCE

## ZONE

Eastern

☒ STANDARD

## MERIDIAN

75th

☐ DAYLIGHT

NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE
85E(C)7823 - 7828	6/02/85	0740	1:50,000	Water level at the time of photography was 601.4 FT (+1.4 FT LWD) based on the Ontonagon, MI gage.

## REMARKS

The plane of reference (Low Water Datum) for Lake Superior is 600.0 FT based on the IGLD (1955). The shoreline datum is the land/water interface at time of photography.

2. SOURCE OF ~~MEAN HIGH WATER LINE~~ SHORELINE:

The natural color compilation photographs listed above.

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

Not applicable.

## 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 Contemporary Survey	TP-01345	TP-01348	TP-01333 (CM-8411)

## REMARKS

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

## HISTORY OF FIELD OPERATIONS

TP-01344

I. ☒ FIELD OPERATION ☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J. Shea	5/85
2. HORIZONTAL CONTROL	RECOVERED BY J. Shea	"
	ESTABLISHED BY J. Shea	"
	PRE-MARKED OR IDENTIFIED BY J. Shea	"
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 BY	
	<input type="checkbox"/> SPECIFIC NAMES ONLY	
	<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	2. VERTICAL CONTROL IDENTIFIED None
---	--

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
85E(C)7826	AGATE 1934 Sub Point		

## 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)

Refer to listing "Index to Project Data and Material on File" which is bound with this Descriptive Report, for information on this subject.

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

## RECORD OF SURVEY USE

TP-01344

## I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Final Reviewed Class III Map	6/87	Chart Maintenance Print	8/87	
Final Reviewed Class III Map	6/87	Notes to Hydrographer Print		8/87

## II. LANDMARKS AND AIDS TO NAVIGATION

## 1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
			There are no charted landmarks or fixed aids to navigation within the limits of this map.

2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: N/A3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: N/A

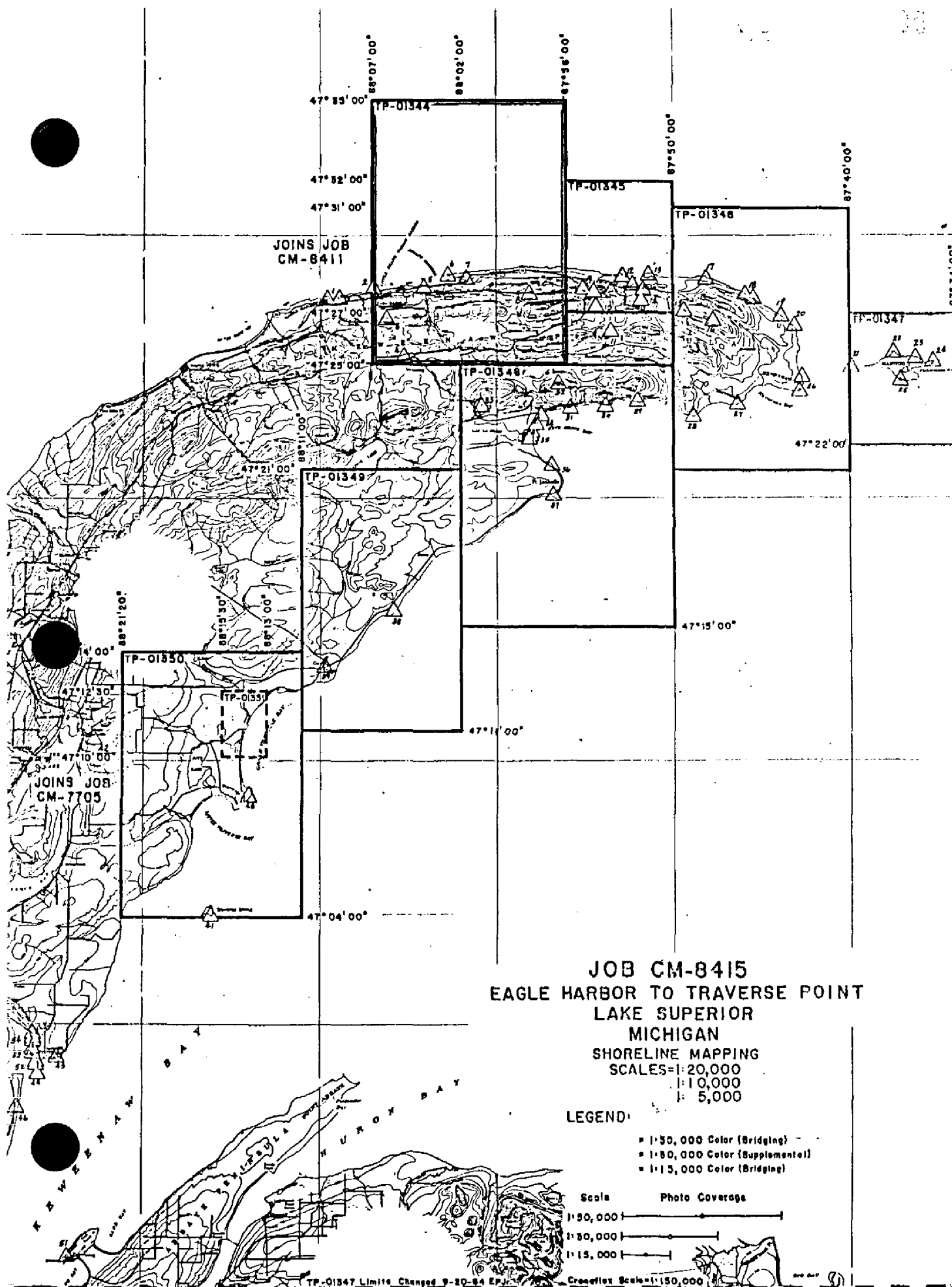
## III. FEDERAL RECORDS CENTER DATA

1. ☐ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.  
 2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 567 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	



JOB CM-8415  
EAGLE HARBOR TO TRAVERSE POINT  
LAKE SUPERIOR  
MICHIGAN  
SHORELINE MAPPING  
SCALES=1:20,000  
1:10,000  
1:5,000

LEGEND:

- 1:50,000 Color (Bridging)
- 1:50,000 Color (Supplemental)
- 1:15,000 Color (Bridging)

## SUMMARY

### COASTAL MAPPING PROJECT CM-8415

Project CM-8415 was planned to provide eight shoreline maps depicting the shoreline and cartographic features of mapping interest of the Lake Superior coastal area from Eagle Harbor to Traverse Point, Michigan. Map TP-01351 was prepared at 1:5,000 scale, maps TP-01345 and TP-01347 at 1:10,000 scale and maps TP-01344, TP-01346 and TP-01348 thru TP-01350 at 1:20,000 scale.

The purpose of the project is to provide contemporary photogrammetric survey data in support of the 1:120,000 scale chart of the forementioned area with insets of Copper, Grand Traverse Bay and Lac La Belle Harbors, which are depicted in graphic form on National Ocean Service Nautical Chart No. 14964.

Field operations in support of the photogrammetric survey took place in May 1985 and consisted of aerial photography and the recovery, establishment and identification (premarking) of horizontal control necessary for aerotriangulation. No field inspection of the shoreline was performed during field operations. Natural color photographs were acquired at 1:50,000, 1:30,000 and 1:15,000 scales for basic aerotriangulation and compilation. A Wild RC-8 camera with E cone was used for all photography conducted for this project.

The aerotriangulation phase was initiated in February 1986 by the Aerotriangulation Unit of the Rockville, Maryland office. Four strips of 1:50,000 scale photographs, two strips of 1:15,000 scale photographs and one strip of 1:30,000 scale photographs were bridged through application of analytical aerotriangulation methods and adjusted to ground through the use of the Analytic Strip Adjustment Program. Primary geodetic control used was premarked. Tie points between overlapping strips of photographs were established to augment datum tie and ensure sufficient control for each strip adjustment. Vertical control elevations were acquired through analysis of elevation data depicted on the pertinent USGS quadrangles of the geographic area. Charted fixed aids to navigation and landmarks were identified and measured during the aerotriangulation phase. During this phase, nine fixed aids to navigation located in the Portage River were identified and measured. Since the Portage River area is outside the limits of this photogrammetric survey, coordinate and other pertinent data relating to each aid was transmitted to the Marine Chart Branch independently of the CM-8415 project data. Ratio values were determined for all compilation photographs. Based on an analysis of the strip adjustment data, the aerotriangulated control is well within the tolerance for photogrammetric control for the mapping scales of this coastal mapping project according to the National Standards of Map Accuracy and the National Ocean Service standard.

The compilation phase was initiated in February 1987 in the Coastal Mapping Unit of the Rockville, Maryland office. Delineation of the shoreline, alongshore, offshore and interior cartographic features was accomplished using a Wild B-8 stereoplotter through application of standard stereographic compilation techniques and based on office interpretation of the natural color compilation photographs. The shoreline was compiled as the visible line of contact between land features and the water surface at the time of photography. Lake level data was provided for the dates of photography based on the International Great Lakes Datum (1955) for Lake Superior with water level taken at the Ontonagon, Michigan gage. The placement, density and quality of the aerotriangulated control was adequate for controlling the stereographic models. All line work was smooth drafted. Standard procedure departures are discussed in paragraph 41 of the Compilation Report, which is bound with the Descriptive Report for each map. The pertinent Production Procedure Memo is bound in the Procedure Departure section of the Project Completion Report.

The final review phase was initiated in June 1987 in the Coastal Mapping Unit of the Rockville, Maryland office. The shoreline maps and associated discrete point data of this project were evaluated as meeting the requirements of the National Standards of Map Accuracy and the National Ocean Service standard. The shoreline maps, reports and data sets comply with the requirements specified in the project instructions. Standard procedures, except as noted in paragraph 41 of the Compilation Report, were adhered to for the compilation, drafting and reproduction of the maps. Standard procedures were also adhered to for the generation of reports, data listings and standard data sets, which are germane to the type of survey and intended use. All source data and photogrammetric measurement instruments meet the standards of accuracy established for the disciplines of field surveying and photogrammetry and those specified in the project instructions.

The Descriptive Reports prepared for the shoreline maps contain all the information pertinent to the completion of the shoreline maps.

PROJECT REPORT  
CM-8415  
EAGLE HARBOR TO TRAVERSE POINT  
LAKE SUPERIOR, MI

Field work was completed on this project during the last 2 weeks in May, 1985 in accordance with Project Instructions dated March 8, 1985.

Fourteen targets were placed for horizontal control on this project.

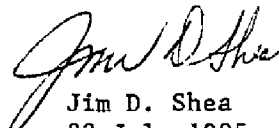
The following targets were positioned using published NGS Horizontal Control: 1, 6, 8, and 13. Target #8 was positioned using the Manitou Island Lighthouse. Two G.P.s were published for this lighthouse. One was a Lake Survey position and one was a published NGS position. The difference in the two positions was 10.834 meters. The published NGS position was used.

Targets 9, 10, and 11 were positioned using the Gull Island Lighthouse. A Lake Survey position for this Lighthouse was furnished. Since the Gull Island Lighthouse was located at the same time as the Manitou Island Lighthouse (by the U.S. Lake Survey), it was felt that the Lake Survey position was probably about 10 meters in error. The old field records were checked by the Rockville office and a new position provided AMC. This position was used to compute targets 9, 10 and 11.

Targets 3, 4, 7, 12, and 14 were positioned using horizontal control established by Geodetic Doppler Satellite observations in 1983.

Targets 2 and 5 were positioned by Geodetic Doppler Satellite observations obtained with Magnavox MX1502 Geocivers during this project. The translocation method was used to determine the positions. Standard NOS survey monuments were set at these sites.

Submitted by

  
Jim D. Shea  
22 July 1985

Aerotriangulation Report  
CM-8415  
Eagle Harbor to Traverse Point  
Lake Superior, Michigan  
February 1986

21. Area Covered

This project covers an area from Eagle Harbor, Lake Superior, down to Traverse Point, Keweenaw Bay, Michigan. There are eight sheets covering the entire project. Five sheets; TP-01344, TP-01346, TP-01348, TP-01349, TP-01350 are at a scale of 1:20,000. Two sheets; TP-01345 and TP-01347 are at a scale of 1:10,000 with the remaining sheet TP-01351 at 1:5,000 scale.

22. Method

Four strips of 1:50,000 scale photographs, two strips of 1:15,000 scale photographs and one strip of 1:30,000 scale photographs were bridged by analytical aerotriangulation methods and adjusted to ground using premarked control. Office identified inter-section stations were used as check control. All imagery for this project consisted of 1985 E(C) photographs.

Tie points were used to ensure adequate junction of all strips and were also used as supplemental control.

Ratio values were determined for the bridging photographs. A copy of these values is attached to this report.

A magnetic tape has been prepared with state plane coordinates of aerotriangulation points. All values are based on the Lambert Conformal Conic Projection in the Michigan North Zone.

23. Adequacy of Control

The control was adequate and meets the National Ocean Service requirement. A listing of the fit to control is attached.

24. Supplemental Data

USGS topographic quadrangles were used to obtain vertical control for bridging. NOS Nautical Charts were used to locate aids and landmarks.

25. Photography

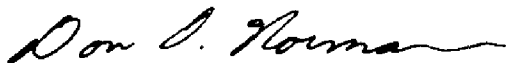
The coverage, overlap, and quality of the photographs were adequate for the job.

Submitted by,



Brian Thornton

Approved and Forwarded:



Don O. Norman  
Chief, Aerotriangulation Unit

## Fit to Control

△ = Control Point Held in Adjustment

□ = Tie Point Held in Adjustment

STRIP #1

<u>STATION NAME</u>	<u>POINT NO</u>	<u>VALUES IN FEET</u>	
		<u>X</u>	<u>Y</u>
△ Ramp, 1981, Sub Pt.	853101	-1.5	1.0
△ Nords, 1985	856100	0.6	-2.7
△ Anorda, 1985	859100	3.0	1.5
△ Gay, 1934	860100	0.3	1.4
△ Lac La Belle, 1982	865100	-5.2	-2.5
△ Copper Harbor, 1982	869100	2.7	1.5

STRIP #2

□	855801	-2.0	1.0
	855802	-1.4	0.0
□	855803	2.6	-1.2
	856801	-1.9	-2.1
□	856802	-0.6	0.2
	856803	-1.3	-1.2
	857801	1.9	-0.7
□	857802	-0.4	0.3
	857803	1.7	-1.1
	858801	0.1	-1.3
	858802	0.2	-0.3
□	858803	0.3	-0.1

STRIP #3

	869801	0.4	1.0
	869802	0.3	0.6
	869803	-1.8	4.5
□	869804	-1.3	0.2
	868801	-1.3	-4.4
	868802	2.0	-2.8
△ Copper Harbor, 1982	869100	2.2	0.6
△ Agate, 1934 Sub Pt.	826101	-1.6	-2.0
△ Eagle Harbor, 1982	828100	0.7	1.1
Eagle Harbor Light House 1934	828111	-0.3	-3.1

STRIP #4

△ Lac La Belle, 1982	865100	0.3	-4.3
	865801	0.3	0.4
□	865802	-1.3	1.6
	865803	-1.0	3.0
	866801	6.1	1.5
□	866802	5.5	2.3
	866803	5.3	0.6
□	867801	-0.8	-0.3
	867802	0.9	-0.8
	867803	0.2	-2.2
	868803	-3.3	1.8
□	868804	-5.2	2.5
	868805	-5.2	1.1
△ Gull Island L.H. Sub Pt	836101	1.4	-1.7

STRIP #5

□	763801	-0.2	-0.2
	763802	0.7	-0.7
	763803	1.7	-1.3
□	763804	-0.7	0.2
△ Copper Harbor, 1982	869100	2.0	1.3
□	765801	0.3	-1.0
	765802	-0.9	-0.1
	765803	0.3	-2.2
□	766801	-1.0	-0.6
□	766802	-2.1	0.5
	766803	-2.6	-2.7
	767801	1.4	-1.5
	767802	0.8	0.8
□	767803	1.7	-0.2

STRIP #6

Manitou Island L.H. USLS	797100	0.5	-0.5
△ Manitou Island L.H. Sub Pt	797101	0.0	0.0
△ Gull Island L.H. Sub Pt #9	799101	0.0	0.0
△ Gull Island L.H. Sub Pt #10	802101	0.0	0.0
Gull Island L.H. (NGS)	799100	7.8	-5.3

STRIP #7

△ Anorda, 1985	859100	1.8	0.4
□	859801	-1.4	-0.8
	859802	-2.3	-0.9
	859803	-1.0	-0.0
	859805	0.0	1.3
□	859806	-0.7	1.1
	859809	0.5	1.3

	859804	-0.7	-1.3
	859807	-2.8	-0.6
△ Grand Traverse, 1982	981100	1.7	-2.6
	858804	-0.6	2.9
□	858805	-2.2	1.8
△ Grand Traverse, 1982 Sub Pt	985101	0.8	0.0

## Ratio Values

CM-8415

1:50,000 Bridging Photographs

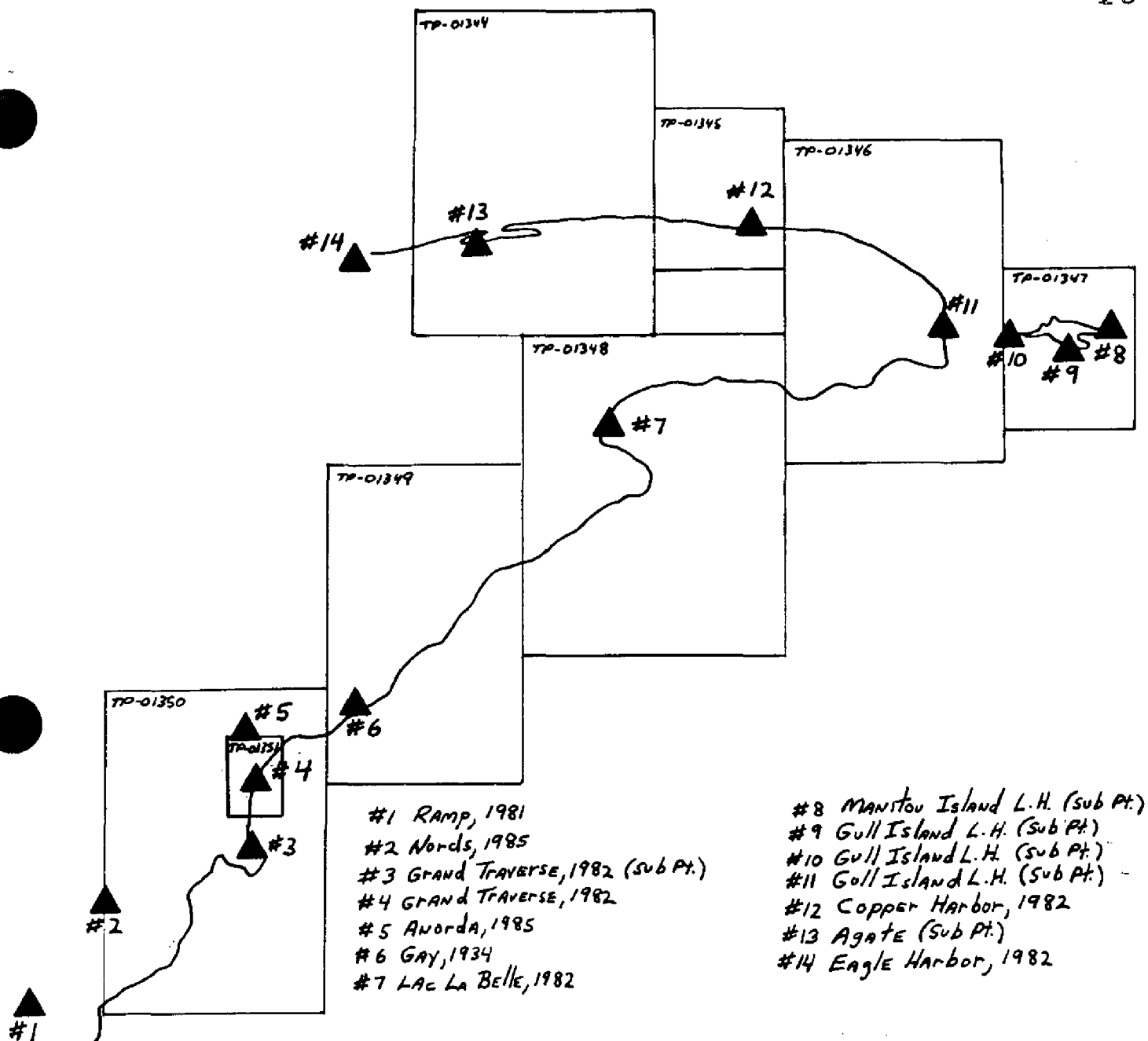
	<u>Ratio Value</u>
85 E(C) 7856 to 7865	2.492
85 E(C) 8014 to 8015	2.509
85 E(C) 7821 to 7828	2.492
85 E(C) 7831 to 7836	2.481

1:30,000 Bridging Photographs

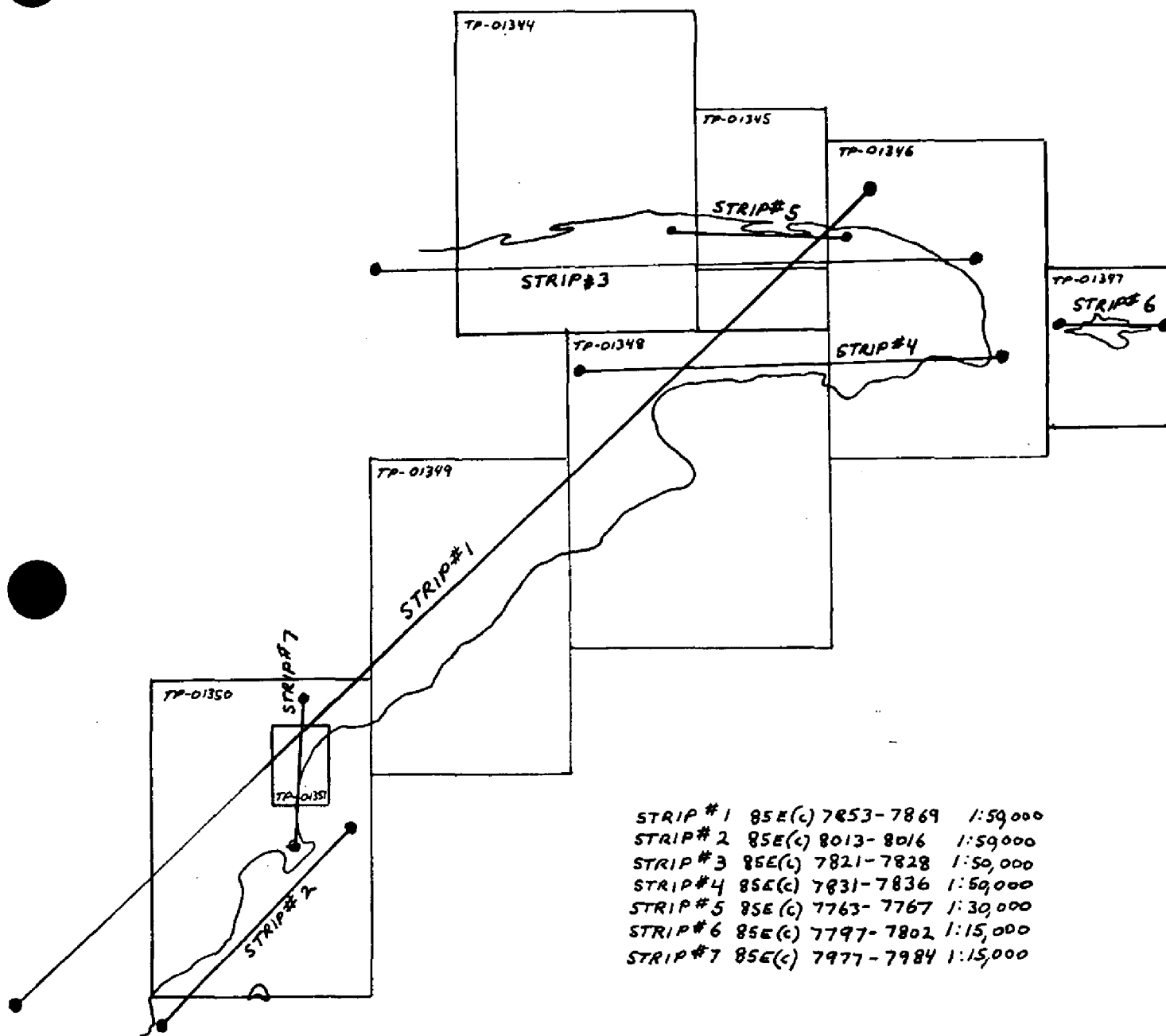
85 E(C) 7764 to 7766	3.042
----------------------	-------

1:15,000 Bridging Photographs

85 E(C) 7798 to 7801	1.423
85 E(C) 7978 to 7983	3.035
85 E(C) 7985	3.035



HORIZONTAL CONTROL  
 JOB CM-8415  
 EAGLE HARBOR TO TRAVERSE POINT  
 LAKE SUPERIOR  
 MICHIGAN



BRIDGING PHOTOGRAPHS  
 JOB CM-8415  
 EAGLE HARBOR TO TRAVERSE POINT  
 LAKE SUPERIOR  
 MICHIGAN



**COMPILATION REPORT****TP-01344****31. Delineation**

Delineation was accomplished using a Wild B-8 stereoplotter through application of standard compilation techniques. Delineation of the shoreline, alongshore, offshore and interior cartographic features was based on office interpretation of the 1:50,000 scale natural color photographs.

**32. Control**

Horizontal control furnished as a result of analytic aerotriangulation was adequate for controlling the stereographic models. Refer to the Aerotriangulation Report, bound with this Descriptive Report, for additional information.

**33. Supplemental Data**

No survey, map or plan of this agency or of any other organization was used to supplement the compilation photographs in the identification of cartographic features.

**34. Contours and Drainage**

The compilation of contours was not a requirement of this project.

Drainage was compiled based on office interpretation of the natural color compilation photographs.

**35. Shoreline and Alongshore Detail**

The shoreline and adjacent structures were compiled as described in item 31 of this report. The shoreline was compiled as the visible line of contact between land features and water surface at the time of photography. There was no preliminary field inspection of the shoreline.

**36. Offshore Detail**

The details offshore of the shoreline were compiled as described in item 31 of this report.

**37. Landmarks and Fixed Aids to Navigation**

There are no charted landmarks or fixed aids to navigation within the limits of the map.

**38. Control for Future Surveys**

Refer to NOAA Form 76-41 bound with this Descriptive Report for information on recoverable control for future surveys.

**39. Junctions**

Refer to item 5 of NOAA Form 76-36B(Data Record), which is bound with this Descriptive Report, for information on map junctions.

**40. Horizontal and Vertical Accuracy**

This map and associated data meet the requirements of the National Standards of Map Accuracy and National Ocean Service standard. For an evaluation of the aerotriangulated and geodetic project control, refer to the Aerotriangulation Report bound with this Descriptive Report.

**41. Procedure Departure**

For information on the contemporary annotation of discrete point data, refer to Coastal Mapping Program Production Procedure Memo No. 1, which is bound in the Procedure Departure Section of the Project Completion Report.

**42. Quality Assurance**

Standard procedures, except for those discussed in paragraph 41, were adhered to for the compilation and drafting of the graphic product. Standard procedures were also adhered to for the generation of reports and data listings.

**43. through 45. - Not applicable****46. Comparison with Existing Maps**

Comparison with existing maps was not a requirement of this project.

**47. Comparison with NOS Nautical Charts**

A comparison was made with the following NOS Nautical Chart:

14964, 17th Edition, August 18, 1984; 1:120,000 scale.

A Chart Maintenance Print indicating the results of the comparison will be forwarded to the Marine Chart Branch, Rockville, Maryland. Refer to the print for items to be immediately applied and carried forward.

Submitted by,



David P. Butler  
Cartographer(Photogrammetry)

Approved by,



Robert W. Rodkey, Jr.  
Chief, Coastal Mapping Unit

## REVIEW REPORT

TP-01344

**61. General Statement**

Refer to the Summary bound with this Descriptive Report for an overview of the photogrammetric operations related to the production of this map and completion of this project.

**62. Comparison with Registered Topographic Surveys - Not applicable****63. Comparison with Maps of Other Agencies - Not applicable****64. Comparison with Hydrographic Surveys - Not applicable****65. Comparison with NOS Nautical Charts**

Refer to item 47 of the Compilation Report bound with this Descriptive Report for information on this subject.

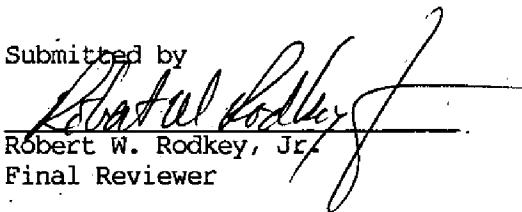
**66. Adequacy of Results and Future Surveys**

This map meets the National Standards of Map Accuracy, National Ocean Service standards and the requirements specified in the project instructions. No mapped features are of a nature which requires critical investigation in future surveys.

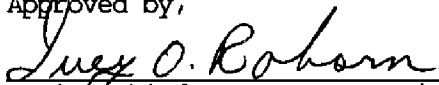

**67. Quality Assurance**

Standard procedures, except for those discussed in paragraph 41 of the Compilation Report, were adhered to for the compilation, drafting and reproduction of this map. Standard procedures were also adhered to for the generation of reports, data listings and standard data sets, which are germane to the type of survey and intended use. All source data and photogrammetric measurement instruments meet the standards of accuracy established for the disciplines of field surveying and photogrammetry and those specified in the project instructions.

Submitted by

  
Robert W. Rodkey, Jr.  
Final Reviewer

Approved by,

  
Acting Chief, Photogrammetric Production Section  
Chief, Photogrammetry Branch

## GEOGRAPHIC NAMES

## FINAL NAME SHEET

CM-8415 (Eagle Harbor to Traverse Point, Michigan)

TP-01344

Agate Harbor

Agate Point

Bailey Creek

Bailey, Lake

Dans Point

Glazon, Lake

~~Little Grand Marais Harbor~~ *LMR*

Mudd Lake

North Bay

Silver River

South Bay

Superior, Lake

Upson Creek

Upson, Lake

Approved:

*Charles E. Harrington*

Charles E. Harrington

Chief Geographer

Nautical Charting Division

Charting and Geodetic Services

**INDEX TO PROJECT DATA AND MATERIAL ON FILE**

**COASTAL MAPPING PROJECT CM-8415**

**Lake Superior  
Eagle Harbor to Traverse Point, Michigan**

**NATIONAL ARCHIVES/FEDERAL RECORDS CENTER**

**Brown Jacket:**

- One binder of original field data for Project CM-8415 containing Control Station Identification Cards, tabulation and calculation forms and listings.
- One envelope containing one copy of the project diagram, one copy each of 7 NOAA Form 76-41, one copy of the Aero-triangulation Report
- One NOAA Form 76-52, Observations of Horizontal Directions

**Project Completion Report**

**AGENCY ARCHIVES**

- Registration Copy of each Map
- Descriptive Report of each Map

**PHOTOGRAMMETRIC ELECTRONIC DATA LIBRARY**

There is no digital data for this project.

**REPRODUCTION BRANCH**

- 8X Reduction Negative of each Map

**OFFICE OF THE STAFF GEOGRAPHER**

- Geographic Names Standard

