TP-01346

TP-01346

NOAA FORM 76-35
(6-80)

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

DESCRIPTIVE REPORT

Map No. TP-01346	*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 Keweenaw Point

This map will not be field edited.

19 85 TO 19

REGISTERED IN ARCHIVES

DATE

*U.S. GOVERNMENT PRINTING OFFICE: 1980-665-115

DESCRIPTIVE REPORT

TP-01346

TABLE OF CONTENTS

NOAA FORM 76-36A (3-72) — U. S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.

DESCRIPTIVE REPORT - DATA RECORD

TYPE OF SURVEY
- [X] ORIGINAL
- [ ] RESURVEY
- [ ] REVISED

SURVEY TP- 01346
MAP EDITION NO. (1)
MAP CLASS III
JOB PH-CM-8415

PHOTOGRAMMETRIC OFFICE
Photogrammetry Branch
Rockville, Maryland

OFFICER-IN-CHARGE
CDR A. Y. Bryson

LAST PRECEEDING MAP EDITION
TYPE OF SURVEY
- [ ] ORIGINAL
- [ ] RESURVEY
- [ ] 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: [X] 1927 NORTH AMERICAN — OTHER (Specify)

2. VERTICAL: [ ] MEAN HIGH-WATER [ ] MEAN LOW-WATER [ ] MEAN LOWER LOW-WATER [ ] 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	Brian Thornton	2/86
METHOD: Analytical	LANDMARKS AND AIDS BY	N/A	
2. CONTROL AND BRIDGE POINTS	PLOTTED BY	Fay Mauldin	9/86
METHOD: Automated plotter(Xynetics)	CHECKED BY	N/A	
3. STEREOSCOPIC INSTRUMENT COMPILATION	PLANIMETRY BY	David Butler	12/86
	CHECKED BY	J. Richard Minton	12/86
INSTRUMENT: Wild B-8	CONTOURS BY	N/A	
SCALE:	CHECKED BY	N/A	
4. MANUSCRIPT DELINEATION	PLANIMETRY BY	David Butler	4/87
	CHECKED BY	Robert Rodkey	5/87
	CONTOURS BY	N/A	
METHOD: Smooth Drafting	CHECKED BY	N/A	
	HYDRO SUPPORT DATA BY	N/A	
SCALE: 1:20,000	CHECKED BY	N/A	
5. OFFICE INSPECTION PRIOR TO FIELD EDIT	BY	N/A	
6. APPLICATION OF FIELD EDIT DATA	BY	N/A	
	CHECKED BY	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	8/87
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH	BY	Gregory Fromm	9/87
11. MAP REGISTERED - COASTAL SURVEY SECTION	BY	JOAN RIKON	10/87

NOAA FORM 76-36A — SUPERSEDES FORM C&GS 181 SERIES

* U.S. G.P.O. 1972-769382/582 REG.#6

NOAA FORM 76-36B
(3-72)

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

COMPILATION SOURCES

TP-01346

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 ☐ DAYLIGHT
MERIDIAN: 75th

NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE
85E(C)7821 - 7823	6/02/85	0731	1:50,000	Water level at the time of photography was 601.4 FT (=1.4 FT LWD) based on the Ontonagon, MI gage.
85E(C)7834 - 7836	6/02/85	0746	1:50,000	

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-01347	No Contemporary Survey	TP-01345/TP-01348

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-01346

I. [X] FIELD [redacted] 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. Minton	"
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 [X] NO INVESTIGATION	BY	
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)7836	Gull Island Lighthouse 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 [X] NONE

6. BOUNDARY AND LIMITS: [ ] REPORT [X] 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 more information on this subject.

☆U.S. Government Printing Office: 1975 — 665-661/1110, Region No. 6

NOAA FORM 76-36D
(3-72)

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

RECORD OF SURVEY USE

TP-01346

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

2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: N/A
3. ☐ 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:

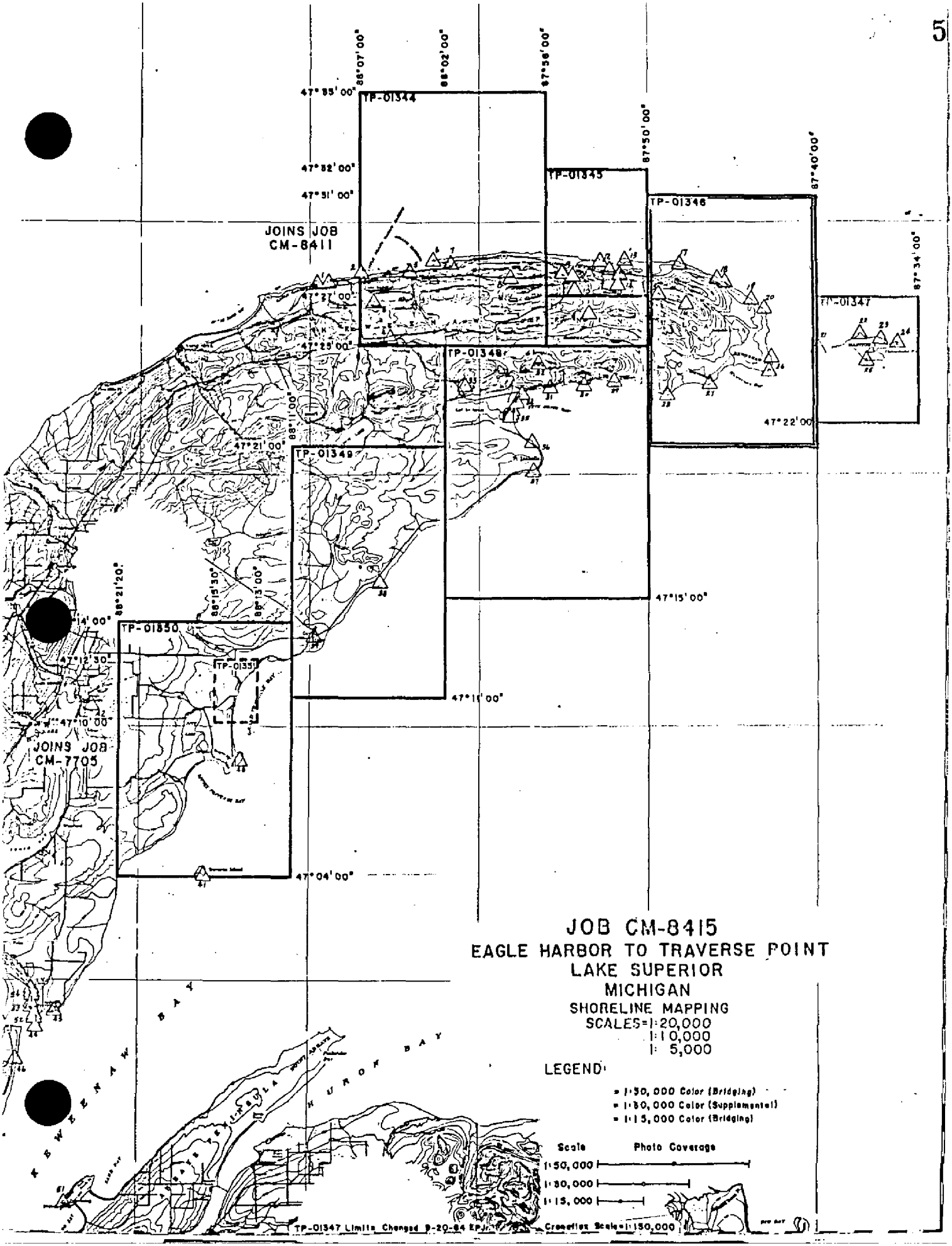
4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: _____

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

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

NOAA FORM 76-36D

★U. S. GOVERNMENT PRINTING OFFICE: 1973--778075/1077 REGION NO. 6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47°15'00"
47°10'00"
47°04'00"
88°11'00"
88°15'30"
88°13'00"
88°21'20"
TP-01344
TP-01345
TP-01346
TP-01347
TP-01348
TP-01349
TP-01350
TP-01351
JOINS JOB CM-8411
JOINS JOB CM-7705
JOB CM-8415
EAGLE HARBOR TO TRAVERSE POINT
LAKE SUPERIOR
MICHIGAN
SHORELINE MAPPING
SCALES=1:20,000
1:10,000
1: 5,000
LEGEND
= 1:30,000 Color (Bridging)
= 1:30,000 Color (Supplemental)
= 1:15,000 Color (Bridging)
Scale
Photo Coverage
1:30,000
1:30,000
1:15,000
TP-01347 Limits Changed 9-20-84 EPJ
Crossflex Scale=1:30,000

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 Geoceivers during this project. The translocation method was used to determie 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 intersection 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

Don O. Norman
Chief, Aerotriangulation Unit

Fit to Control

△ = Control Point Held in Adjustment

□ = Tie Point Held in Adjustment

STRIP #1

	STATION NAME	POINT NO	VALUES IN FEET X	Y
△	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

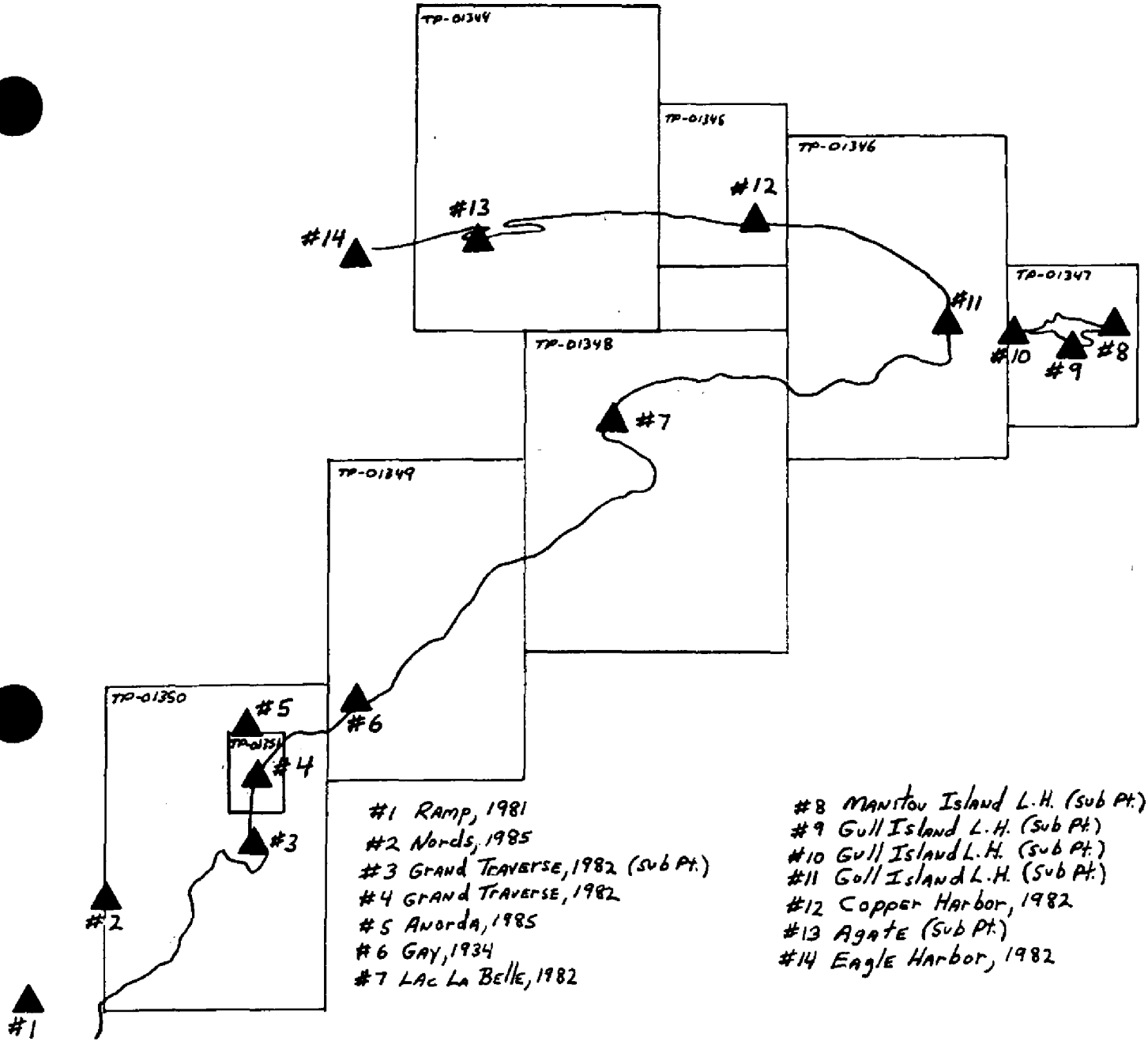
	Ratio Value
85 E(C) 7856 to 7865	2.492
85 E(C) 8014 to 8015	2.509
85 E(C) 7821 to 7828	2.492
85 E(C) 7831 to 7836	2.481

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

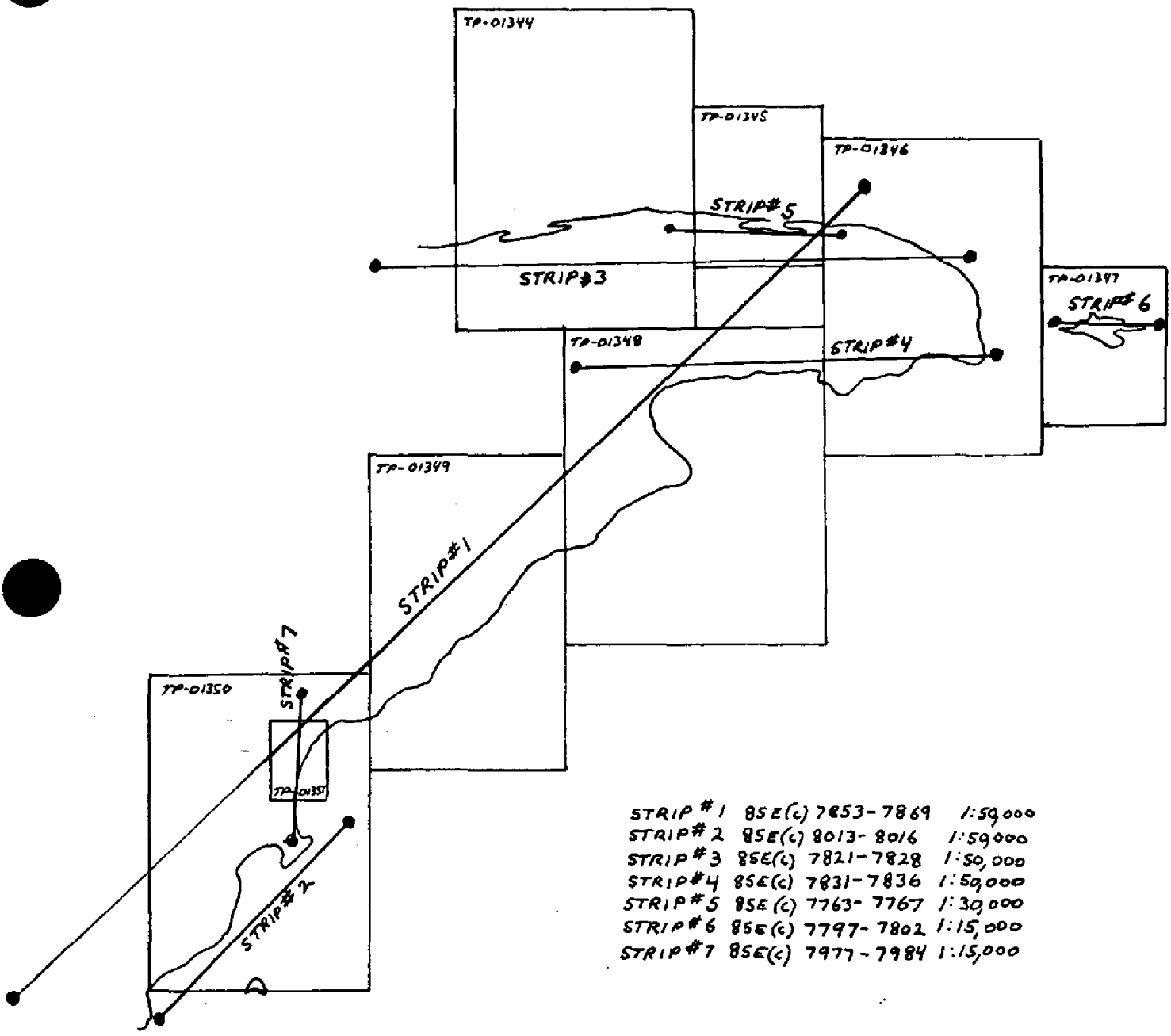


#1 Ramp, 1981
#2 Nords, 1985
#3 Grand Traverse, 1982 (sub Pt.)
#4 Grand Traverse, 1982
#5 Anorda, 1985
#6 Gay, 1934
#7 Lac La Belle, 1982

#8 Manitou Island L.H. (sub Pt.)
#9 Gull Island L.H. (sub Pt.)
#10 Gull Island L.H. (sub Pt.)
#11 Gull Island L.H. (sub Pt.)
#12 Copper Harbor, 1982
#13 Agate (sub Pt.)
#14 Eagle Harbor, 1982

HORIZONTAL CONTROL

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



STRIP #1 85E(c) 7853-7869 1:59,000
STRIP #2 85E(c) 8013-8016 1:59,000
STRIP #3 85E(c) 7821-7828 1:50,000
STRIP #4 85E(c) 7831-7836 1:50,000
STRIP #5 85E(c) 7763-7767 1:30,000
STRIP #6 85E(c) 7797-7802 1:15,000
STRIP #7 85E(c) 7977-7984 1:15,000

BRIDGING PHOTOGRAPHS

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

COMPILATION REPORT

TP-01346

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

No permanent control stations were established or recovered within the limits of this map during the field operations phase of this project.

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

David P. Butler
Cartographer(Photogrammetry)

Approved by,

Robert W. Rodkey

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

REVIEW REPORT

TP-01346

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

MAY 1 - 1987

20

GEOGRAPHIC NAMES

FINAL NAME SHEET

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

TP-01346

Bay Lake
Fish Cove
Gill Lake
High Rock Bay
Hoar Creek
Hoar Lake
Horseshoe Harbor
Keweenaw Point
Keystone Bay
Keystone Point
Schlatter Lake
Superior, Lake
Union Creek

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

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. TP-01346

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
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			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.