

TP-01396

TP-01396

NOAA FORM 76-35 (6-80)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
Map No. TP-01396	Edition No. 1
Job No. CM 8511	
Map Classification III	
Type of Survey SHORELINE	
LOCALITY	
State MICHIGAN	
General Locality LAKE SUPERIOR	
Locality WHITEFISH POINT	
19 86 TO 19	
REGISTERED IN ARCHIVES	
DATE	

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.							
<b>DESCRIPTIVE REPORT - DATA RECORD</b>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">           TYPE OF SURVEY  <input checked="" type="checkbox"/> ORIGINAL  <input type="checkbox"/> RESURVEY  <input type="checkbox"/> REVISED         </td> <td style="width:50%;">           SURVEY TP. <u>01396</u>             MAP EDITION NO. <u>(1)</u>             MAP CLASS <u>III</u>            JOB <u>XXCM 8511</u> </td> </tr> </table>		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	SURVEY TP. <u>01396</u>  MAP EDITION NO. <u>(1)</u>  MAP CLASS <u>III</u> JOB <u>XXCM 8511</u>				
TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	SURVEY TP. <u>01396</u>  MAP EDITION NO. <u>(1)</u>  MAP CLASS <u>III</u> JOB <u>XXCM 8511</u>								
PHOTOGRAMMETRIC OFFICE Photogrammetry Branch Rockville, MD		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;"> <b>LAST PRECEDING MAP EDITION</b> </td> </tr> <tr> <td style="width:50%;">           TYPE OF SURVEY  <input type="checkbox"/> ORIGINAL  <input type="checkbox"/> RESURVEY  <input type="checkbox"/> REVISED         </td> <td style="width:50%;">           JOB PH- _____            MAP CLASS _____            SURVEY DATES:            19__ TO 19__         </td> </tr> </table>		<b>LAST PRECEDING MAP EDITION</b>		TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	JOB PH- _____ MAP CLASS _____ SURVEY DATES: 19__ TO 19__		
<b>LAST PRECEDING MAP EDITION</b>									
TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	JOB PH- _____ MAP CLASS _____ SURVEY DATES: 19__ TO 19__								
OFFICER-IN-CHARGE  Cdr. A. Y. Bryson									
<b>I. INSTRUCTIONS DATED</b>									
<b>1. OFFICE</b>		<b>2. FIELD</b>							
Aerotriangulation      April 20, 1987  Office                      July 27, 1987		Field                      January 27, 1986							
<b>II. DATUMS</b>									
<b>1. HORIZONTAL:</b> <input checked="" type="checkbox"/> 1927 NORTH AMERICAN		OTHER (Specify) _____							
<b>2. VERTICAL:</b> <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 Lake Datum (1955)							
<b>3. MAP PROJECTION</b>  Transverse Mercator Projection		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;"> <b>4. GRID(S)</b> </td> </tr> <tr> <td style="width:50%;">           STATE Michigan         </td> <td style="width:50%;">           ZONE East         </td> </tr> <tr> <td style="height: 20px;">STATE</td> <td style="height: 20px;">ZONE</td> </tr> </table>		<b>4. GRID(S)</b>		STATE Michigan	ZONE East	STATE	ZONE
<b>4. GRID(S)</b>									
STATE Michigan	ZONE East								
STATE	ZONE								
<b>5. SCALE</b> 1:20,000 and 1:5,000 (inset)									
<b>III. HISTORY OF OFFICE OPERATIONS</b>									
<b>OPERATIONS</b>		<b>NAME</b>	<b>DATE</b>						
<b>1. AEROTRIANGULATION</b> BY J. Taylor May 1987 METHOD: Analytical LANDMARKS AND AIDS BY J. Taylor May 1987									
<b>2. CONTROL AND BRIDGE POINTS</b> PLOTTED BY J. Taylor May 1987 METHOD: Kongsburg Flatbed Plotter CHECKED BY N/A									
<b>3. STEREOSCOPIC INSTRUMENT</b> PLANIMETRY BY T. Doyle and D. Graham Oct. 1987 COMPILATION CHECKED BY J. Schad Oct. 1987 INSTRUMENT: Wild B-8 CONTOURS BY H/A SCALE: 1:20,000 and 1:5,000 CHECKED BY H/A									
<b>4. MANUSCRIPT DELINEATION</b> PLANIMETRY BY T. Doyle and D. Graham Oct. 1987 CHECKED BY J. Schad Oct. 1987 METHOD: Smooth Drafting CONTOURS BY H/A CHECKED BY N/A HYDRO SUPPORT DATA BY N/A SCALE: 1:20,000 and 1:5,000 CHECKED BY N/A									
<b>5. OFFICE INSPECTION PRIOR TO FIELD EDIT</b> BY N/A									
<b>6. APPLICATION OF FIELD EDIT DATA</b> BY N/A CHECKED BY N/A									
<b>7. COMPILATION SECTION REVIEW</b> BY J. Schad Oct. 1987									
<b>8. FINAL REVIEW</b> BY J. Schad NOV 10, 1987									
<b>9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH</b> BY J. Schad NOV 10, 1987									
<b>10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH</b> BY P. Dempsey DEC. 1987									
<b>11. MAP REGISTERED - COASTAL SURVEY SECTION</b> BY J. RIKON APR 28, 1988									

NOAA FORM 76-36B (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY			
<b>COMPILATION SOURCES</b>					
TP-01396					
<b>1. COMPILATION PHOTOGRAPHY</b>					
CAMERA(S) Wild RC-8(E) F/L 152.71		TYPES OF PHOTOGRAPHY LEGEND (C) COLOR (P) PANCHROMATIC (I) INFRARED		TIME REFERENCE	
TIDE STAGE REFERENCE <input type="checkbox"/> PREDICTED TIDES <input checked="" type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY				ZONE Eastern MERIDIAN 75th <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> DAYLIGHT	
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
86 E(C) 6218-6220	6/2/86	15:11	1:50,000	The water level at the time of Photography was 601.7 ft. based on gage at Marquette, Michigan (Sta #9018).	
86 E(C) 6861-6862	6/8/86	15:08	1:15,000		
REMARKS Plane of reference (Low Water Datum) for Lake Superior is 600.0 ft. The shoreline datum is lake level at time of photography.					
<b>2. SOURCE OF <del>MEAN HIGH WATER LINE</del> SHORELINE:</b>					
The photographs listed above.					
<b>3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE:</b>					
N/A					
<b>4. CONTEMPORARY HYDROGRAPHIC SURVEYS</b> (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
<b>5. FINAL JUNCTIONS</b>					
NORTH	EAST	SOUTH	WEST		
N/A	TP-01395	TP-01397	N/A		
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-01396

I. ☐ FIELD INSPECTION OPERATION☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J. E. Dunford	June 1986
2. HORIZONTAL CONTROL	RECOVERED BY J. E. Dunford	May 1986
	ESTABLISHED BY J. E. Dunford	May 1986
	PRE-MARKED OR IDENTIFIED BY J. E. Dunford	May 1986
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	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE BY <input type="checkbox"/> SPECIFIC NAMES ONLY <input type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	NONE
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	N/A

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

2. VERTICAL CONTROL IDENTIFIED

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
86(E) 6861	WHITE, 1965		
86(E) 6219	WHITEFISH PT LH, 1965		
	WHITEFISH PT HBR:		
	INNER BKW LT, 1981		
	NORTH BKW LT, 1981		
	SOUTH BKW LT, 1981		
	WHITEFISH PT RADIO RECEIVING TR, 1965		

3. PHOTO NUMBERS (Clarification of details)

N/A

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME
86(E) 6861	WHITEFISH PT LH, 1965		
86(E) 6219	WHITEFISH PT RADIO RECEIVING TR, 1965		
	WHITEFISH PT HBR:		
	INNER BKW LT, 1981		
	NORTH BKW LT, 1981		
	SOUTH BKW LT, 1981		

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

7. SUPPLEMENTAL MAPS AND PLANS

One Field Work Brown Binder

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

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

## RECORD OF SURVEY USE TP-01396

## I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Final Reviewed Class III Map	Dec. 1987	Chart Maintenance Print		
Final Reviewed Class III Map	Dec. 1987	Notes to Hydrographer Print		

## II. LANDMARKS AND AIDS TO NAVIGATION

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

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
1 pg		Dec. 1987	Cartographic Feature of Charting Interest

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

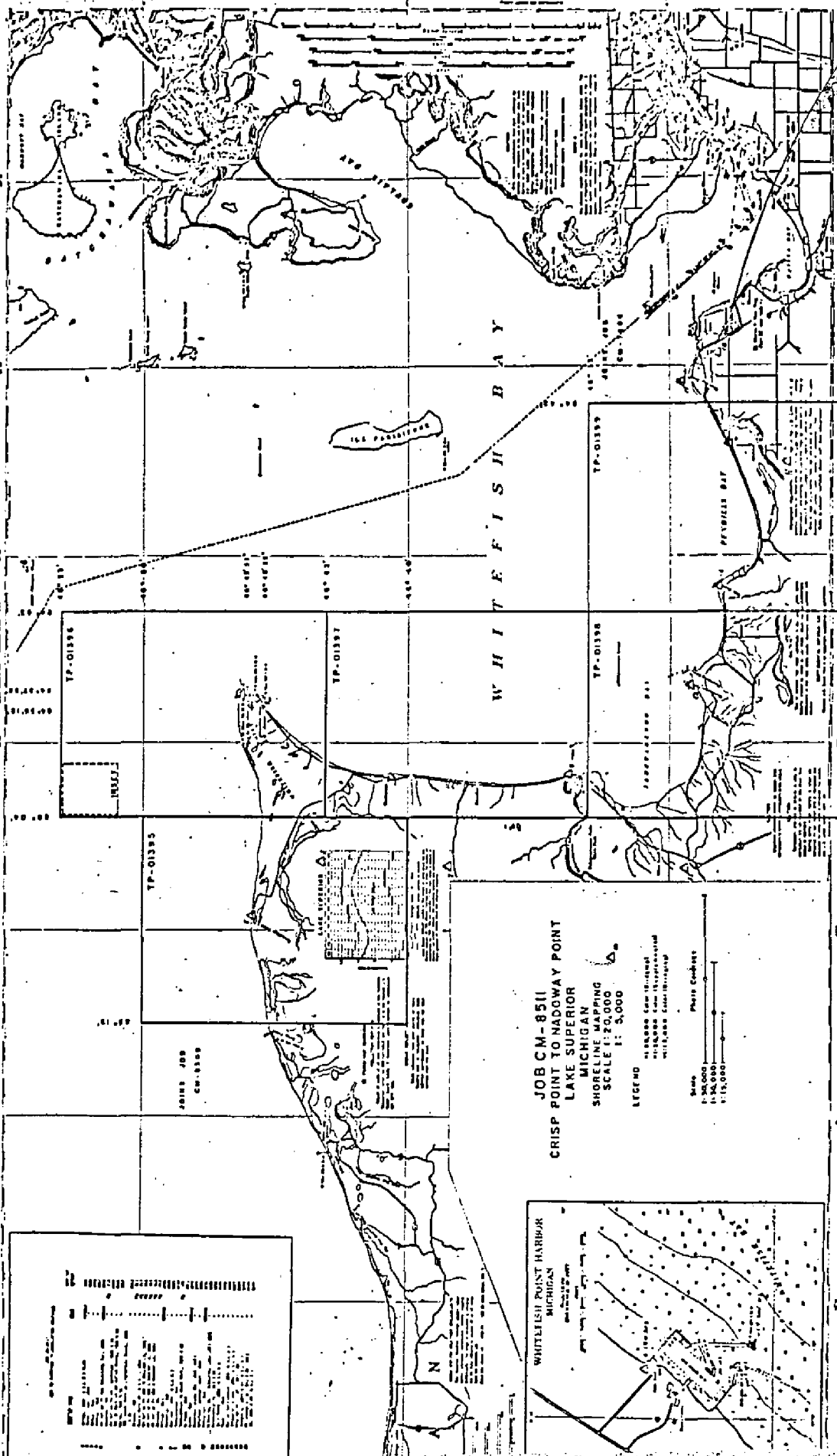
1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☐ COMPUTER READOUTS.  
 2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 567 SUBMITTED BY FIELD PARTIES.  
 3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.  
 ACCOUNT FOR EXCEPTIONS:

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	

SOUNDINGS, FEET



1962  
 DULLES OCEANIC  
 CHARTS

(St. Marys River to La Salle Point)

WHITEFISH BAY

WHITEFISH POINT HARBOR  
 MICHIGAN

SUMMARY TO ACCOMPANY  
DESCRIPTIVE REPORT  
TP-01396

Project CM-8511 consisted of the production of Class III shoreline maps. Five 1:20,000-scale and one 1:5,000-scale maps were compiled. The area compiled extends from Crisp Point to Nadoway Point, Michigan.

The purpose of this map, TP-01396, 1:20,000 scale, and the 1:5,000 scale inset is to provide contemporary shoreline data for maintenance of the nautical charting program.

Field operations consisted of aerial photography and the recovery, establishment, and identification (premarking) of horizontal control necessary for aerotriangulation. Twelve horizontal control stations were paneled for use in aerotriangulation. Field operations for project CM-8511 commenced in May 1986 and concluded in June 1986.

Natural color photographs 1:50,000 scale and 1:15,000 scale were taken in June 1986 with the Wild RC-8C(E) camera. Supplemental natural color photographs at 1:30,000 scale were not used for compilation.

Three strips of 1:50,000-scale color photographs were bridged using analytical aerotriangulation methods. One 1:50,000-scale model and one 1:15,000-scale model were bridged using the NOSAP (IDPF system).

Horizontal control stations used in the adjustment were premarked panels. Elevations from U.S.G.S quadrangles were used as vertical control. The amount of aerotriangulated control proved adequate and meets National Standards of Map Accuracy.

Compilation was performed by the Special Project Unit, Rockville Office. This map delineation was based on office interpretation of the natural color photographs using the Wild B-8 stereoplotter and the ratio color photographs. All line work was smooth drafted.

Final review was performed by the Special Project Unit, Rockville office. This map compiles with the project instructions and meets the requirement for the National Standard of Map Accuracy.

The Descriptive Report contains all the information pertinent to the completion of this map.

FIELD INSPECTION  
TP-01396

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.



AEROTRIANGULATION REPORT  
CM-8511  
CRISP POINT TO NADOWAY POINT, MICHIGAN

MAY 1987

21. AREA COVERED

The area covered by this report is from Crisp Point to Nadoway Point in Lake Superior, Michigan. This area is covered by five 1:20,000-scale manuscripts and one 1:5,000-scale inset that is part of TP-01396. The manuscripts are TP-01395, TP-01396, TP-01397, TP-01398, and TP-01399.

22. METHOD

Three strips of 1:50,000-scale color photographs were bridged and adjusted to the ground using analytic aerotriangulation methods. The measurements were made with the Wild STK comparator. One 1:50,000-scale model and one 1:15,000-scale model of color photographs were bridged and adjusted to the ground with the IDPF system. Tie points were used to supplement control.

Ratio values were determined for the color bridging photographs. No black-and-white infrared photography was secured for this project.

No aids to navigation or landmarks were located during aerotriangulation.

The manuscripts were plotted on the Kongsburg flatbed plotter in the Michigan State Plane Coordinate System, East Zone. This is a Transverse Mercator projection. The data is NAD 27.

23. ADEQUACY OF CONTROL

The horizontal control provided for this project was adequate. Twelve control stations were provided and used in the adjustment. This project meets NOS requirements for map manuscripts.

24. SUPPLEMENTAL DATA

Nautical charts were used to try to locate objects on the color bridging photography. USGS quads were used to obtain elevations to level the strips.

25. PHOTOGRAPHY

The coverage, overlap, and quality of the photographs proved adequate for this project. Some control station panels were difficult to measure due to poor image quality of the photographs.

Submitted by,

*James H. Taylor*  
James H. Taylor

Approved and Forwarded:

*Don O. Norman*

Don O. Norman  
Chief, Aerotriangulation Unit

FIT TO CONTROL  
CM-8511

▲ CONTROL HELD  
■ TIE POINT HELD

<u>STATION NAMES</u>	<u>POINT NUMBER</u>	<u>VALUES IN FEET</u>	
		<u>X</u>	<u>Y</u>
<u>STRIP 15-1</u>			
Whitefish Point Hbr N. Brkwtr Lt., 1981	▲ 861110	0.2	0.0
Whitefish Point Hbr In Brkwtr Lt., 1981	▲ 220110	-2.0	-0.8
White, 1965 Sub Station #5	▲ 220101	0.2	-0.3
Whitefish Point Hbr. S. Brkwtr. Lt., 1981	▲ 861100	1.7	0.2
Whitefish Point Lighthouse, 1965	220120	0.6	1.6
Whitefish Point Red Receiving Twr., 1965	220130	0.5	-1.9
<u>STRIP 50-1</u>			
Pris	▲ 227100	0.3	-0.5
Vermillion, 1965	▲ 230100	1.6	1.4
Betsy, 1965 Sub Station #3	▲ 230111	-1.8	-1.5
Tie From Strip 50-4	219801	3.1	1.9
Tie From Strip 50-4	219802	1.9	2.6
Tie From Strip 50-4	219803	-1.3	2.7
Andrus, 1965 Sub Station #4	▲ 218101	0.0	0.6
<u>STRIP 50-2</u>			
Menekaunce Pt., 1965 Sub Station #9	▲ 204101	0.8	1.4
Tie From Strip 50-3	■ 193801	-1.0	-1.8
Tie From Strip 50-3	■ 193802	0.4	0.8
Tie From Strip 50-3	■ 193803	-0.7	0.2
Tie From Strip 50-3	■ 193804	0.7	-0.6
<u>STRIP 50-3</u>			
Pt. Iroquis L.H. Sub Point #12	▲ 198101	1.1	1.6
Sub Station #11 TP	▲ 200101	-3.8	-1.6
Pen, 1986	▲ 202100	0.6	-0.1
Tie From Strip 50-2	193801	1.0	1.7
Tie From Strip 50-2	193802	-0.3	-0.7
Tie From Strip 50-2	193803	0.7	-0.1
Tie From Strip 50-2	193804	-0.7	0.5

Tie From Strip 50-4	206801	-2.0	3.8
Tie From Strip 50-4	206802	-2.2	5.1
Tie From Strip 50-4	206803	-3.6	5.3
Sub Station #8 TP	▲ 213101	-1.5	-0.5

STRIP 50-4

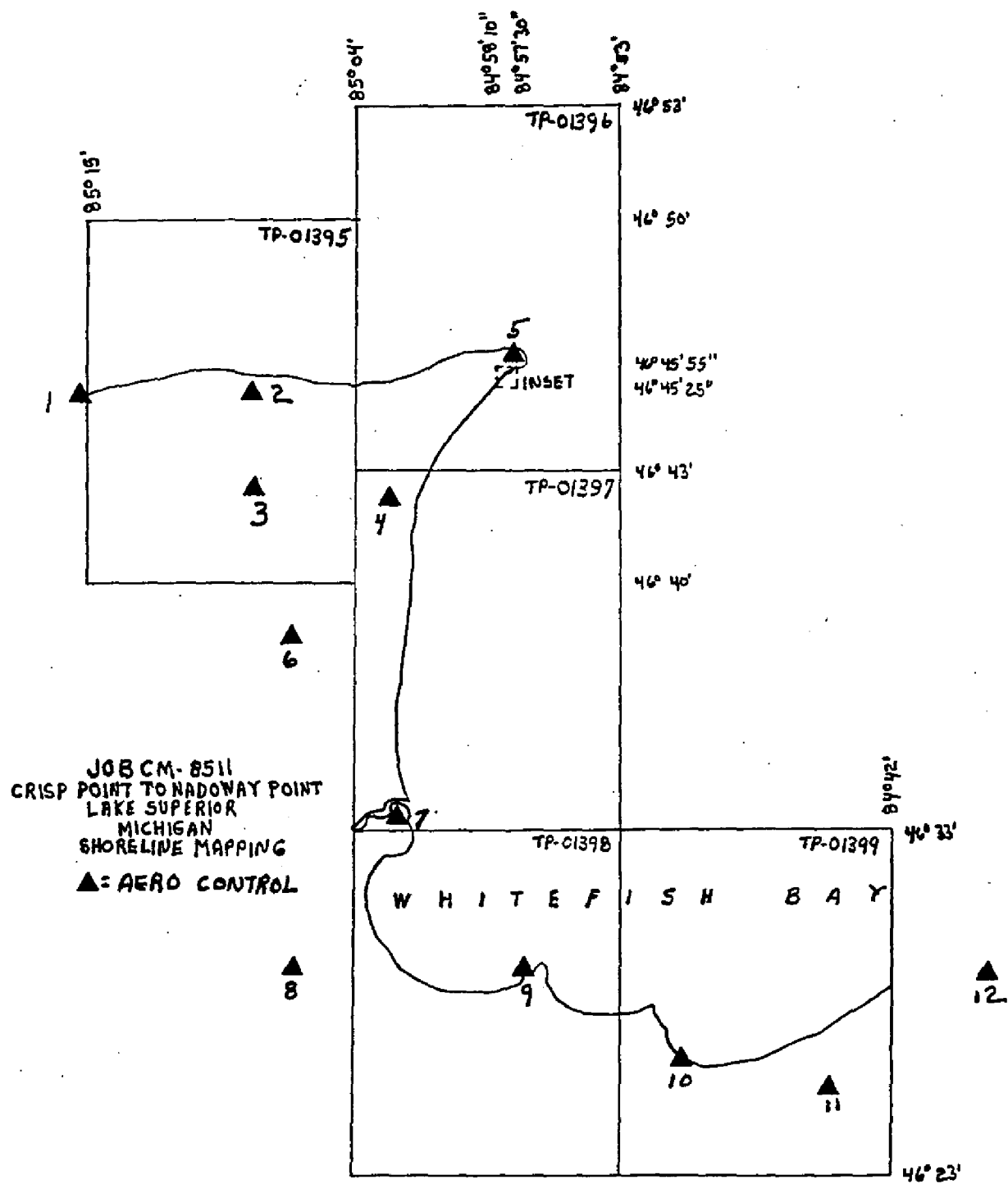
Tie From Strip 50-3	206801	2.0	-3.8
Tie From Strip 50-3	206802	2.2	-5.1
Tie From Strip 50-3	206803	3.6	-5.3
Sub Station #8 TP	▲ 213101	-0.2	0.9
Tahquamenon, 1965, Az. Mk.			
Sub Station #7	▲ 215101	1.9	-1.4
Prison, 1965 Sub Station #6	▲ 217101	-1.7	1.1
Andrus, 1965 Sub Station #4	▲ 218101	0.9	2.3
Tie From Strip 50-1	219801	-3.1	-1.9
Tie From Strip 50-2	■ 219802	-1.9	-2.6
Tie From Strip 50-3	219803	1.3	-2.7
White, 1965 Sub Station #5	▲ 220101	1.5	-1.5
Whitefish Point Hrb In			
Brkwtr Lt., 1981	▲ 220110	-0.5	1.1

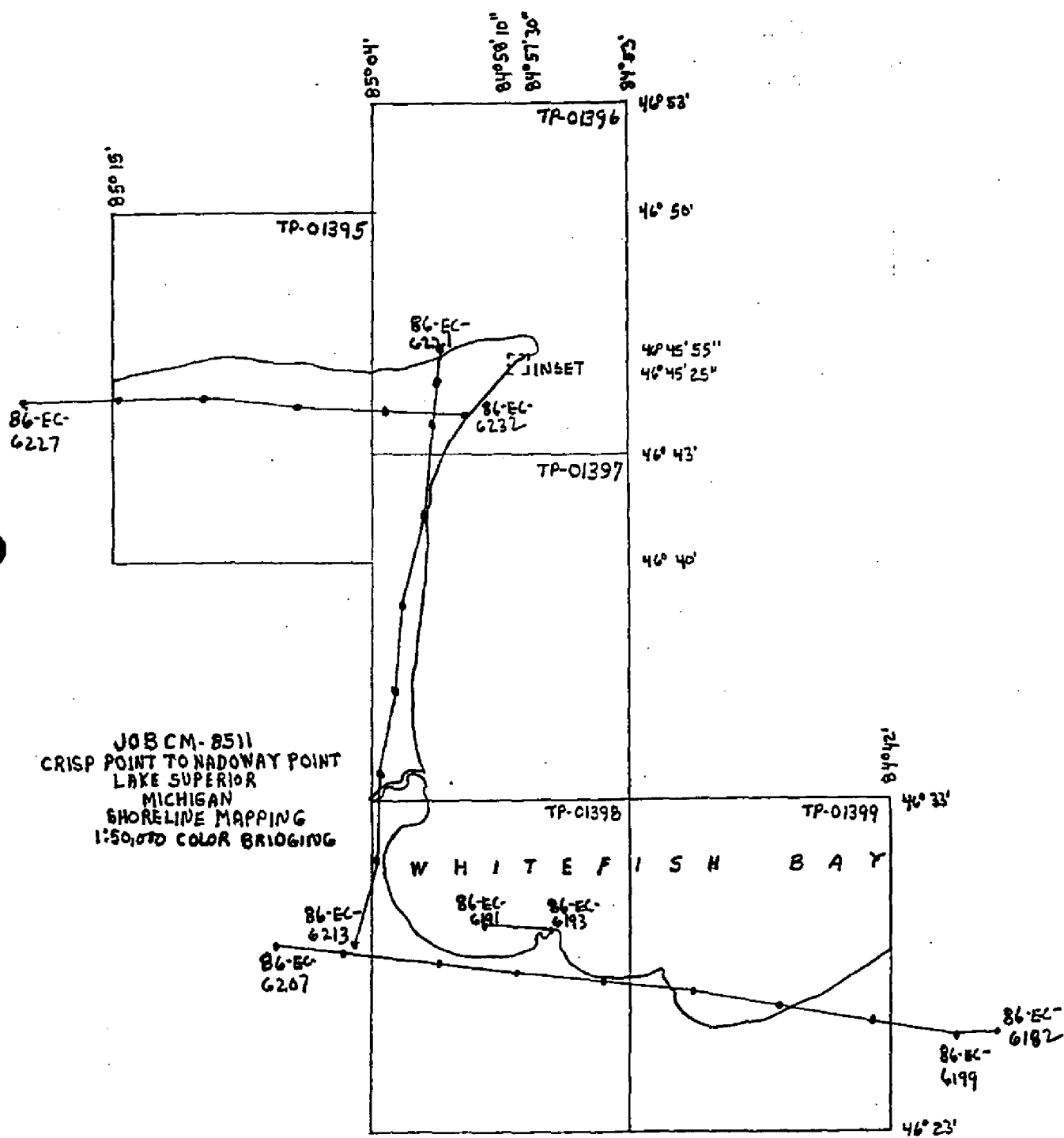
COLOR BRIDGING RATIO VALUE  
CM-8511

86-EC-6191 and 6193	Ratio <u>2.580</u>
86-EC-6200 thru 6205	Ratio <u>2.568</u>
86-EC-6213 thru 6221	Ratio <u>2.581</u>
86-EC-6228 thru 6231	Ratio <u>2.583</u>
86-EC-6861 and 6862	Ratio <u>2.980</u>

KEY TO NUMBERED STATIONS  
CM-8511

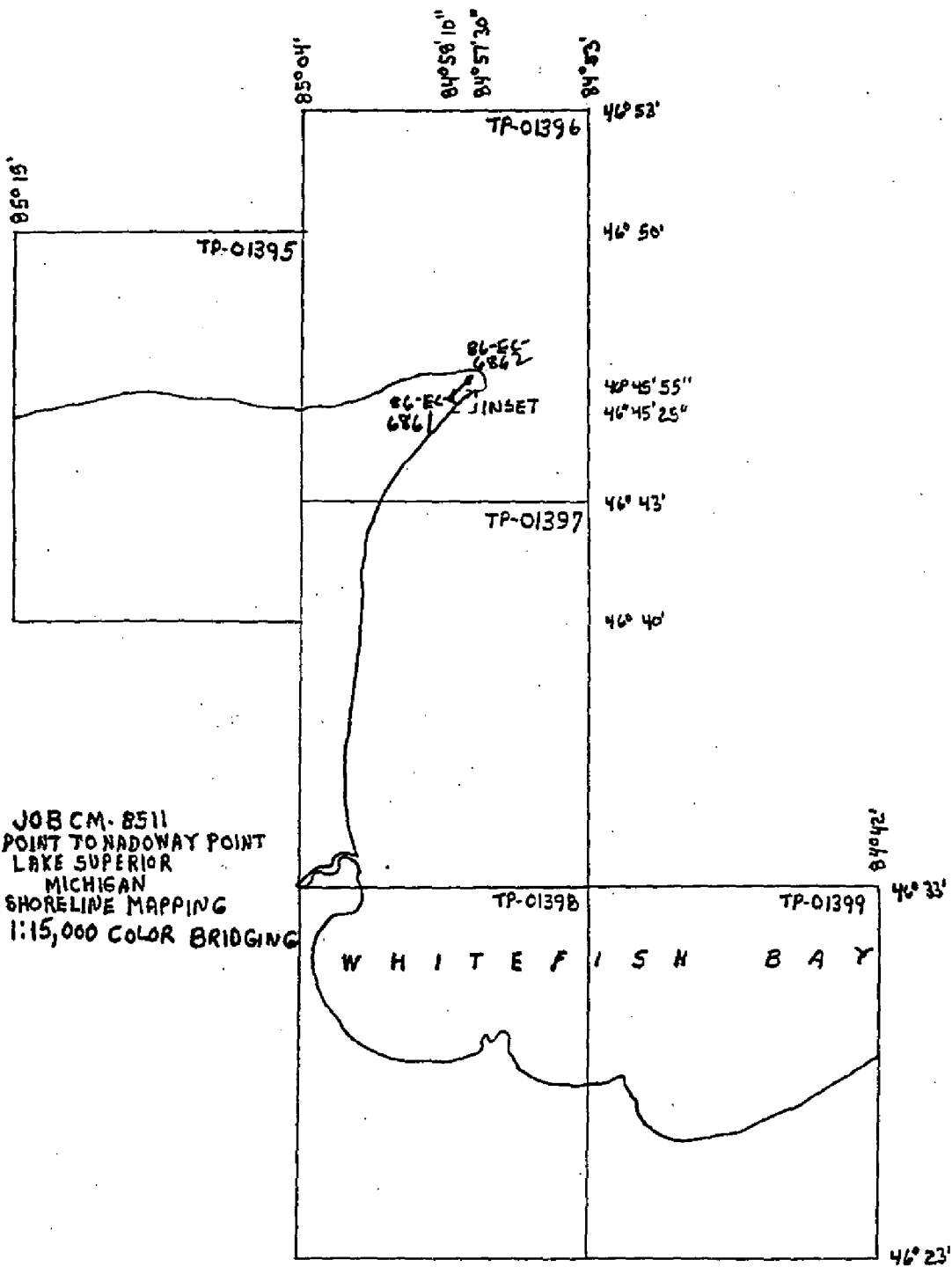
STATION NAME	PANEL NO.	AERO NO.
Pris	1	227100
Vermillion, 1965	2	230100
Betsy, 1965 Sub Station #3	3	230111
Anđrus, 1965 Sub Station #4	4	218101
White, 1965 Sub Station #5	5	220101
Prison, 1965 Sub Station #6	6	217101
Tahqumenon, 1965 Az. Mk.		
Sub Station #7	7	215101
Sub Station #8 TP	8	213101
Menekaunce Pt. 1965		
Sub Station #9	9	204101
Pen, 1986	10	202100
Sub Station #11 TP	11	200101
Pt. Iroquis Lt. Ho.		
Sub Point #12	12	198101







JOB CM-8511  
 CRISP POINT TO NADOWAY POINT  
 LAKE SUPERIOR  
 MICHIGAN  
 SHORELINE MAPPING  
 1:15,000 COLOR BRIDGING



## DESCRIPTIVE REPORT CONTROL RECORD

MAP NO. TP-01396	STATION NAME	JOB NO. CM 8511	GEODETTIC DATUM NA 1927		AEROTRI- ANGULATION POINT NUMBER		SOURCE OF INFORMATION (Index)	COORDINATES IN FEET STATE Michigan ZONE East	GEOGRAPHIC POSITION		REMARKS
			ORIGINAL PROJECT Rockville, MD	φ LATITUDE	λ LONGITUDE						
WHITE, 1965		Quad. 460844 Sta. 1007	220100	x=176,565.882 y=1,924,109.770	φ 46 46 16.022 λ 84 57 26.620	NOT SHOWN ON MAP					
WHITEFISH POINT LIGHTHOUSE, 1965		Sta. 1008	220120	x=176,572.976 y=1,924,107.692	φ 46 46 16.003 λ 84 57 26.518						
WHITEFISH PT HBR INNER BKW LT 1981		G-16940	220110	x=176,616.981 y=1,920,053.319	φ 46 45 35.673 λ 84 57 53.650						
WHITEFISH PT HBR SOUTH BKW LT 1981		G-16940	861100	x=174,658.253 y=1,919,815.332	φ 46 45 33.332 λ 84 57 53.001						
WHITEFISH PT HBR NORTH BKW LT 1981		G-16940	861100	x=174,854.191 y=1,919,672.246	φ 46 45 31.951 λ 84 57 50.153						
WHITEFISH PT RADIO RECEIVING TR, 1965		Quad. 460844 Sta. 1009	220130	x=176,721.845 y=1,923,944.031	φ 46 46 14.412 λ 84 57 24.341						
				x=	φ						
				y=	λ						
				x=	φ						
				y=	λ						
				x=	φ						
				y=	λ						
				x=	φ						
				y=	λ						
COMPUTED BY			DATE	COMPUTATION CHECKED BY		DATE					
LISTED BY D. O. Norman			DATE 11/12/86	LISTING CHECKED BY L. W. Harrod, Jr./J. Schad		DATE 12/11/86					
HAND PLOTTING BY			DATE	HAND PLOTTING CHECKED BY		DATE					

COMPILATION REPORT  
TP-01396 and 1:5,000-scale inset

31. DELINEATION

Delineation of detail was accomplished using a Wild B-8 stereoplotter.

32. CONTROL

Horizontal control furnished by the Aerotriangulation Unit was adequate for controlling the stereomodels. Refer to the Photogrammetric Plot Report bound with this Descriptive Report for additional information.

Vertical control was achieved by using a combination of elevations provided by the Aerotriangulation Unit, USGS quadrangles, and the land/water interface.

33. SUPPLEMENTAL DATA

None

34. CONTOURS AND DRAINAGE

The compilation of contours was not a requirement of this project. Drainage was compiled based on office interpretation of the bridging/compilation photographs.

35. SHORELINE AND ALONGSHORE DETAILS

The visible line of contact between land features and the water was compiled as the shoreline. The water level at the time of photography was 601.7 feet. Shoreline delineation was compiled as described in item 31 of this report.

Alongshore detail consisted of breakwaters, groins, piers, ruins, and a pile. Shoreline and alongshore delineation was compiled as described in item 31 of this report.

36. OFFSHORE DETAIL

Offshore detail consisted of a wreck. Offshore detail was compiled by instrument methods as described in item 31 of this report.

37. LANDMARKS AND AIDS

One landmark and three aids to navigation were located and identified on this map. Refer to the Cartographic Features of Charting Interest page bound with this report.

38. CONTROL FOR FUTURE SURVEYS

None

39. JUNCTIONS

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

40. HORIZONTAL AND VERTICAL ACCURACY

This map meets the National Standards of Map Accuracy. For additional information, refer to the Aerotriangulation Report bound with this Descriptive Report.

41.through 45. - Not Applicable

46. COMPARISON WITH EXISTING MAPS

A comparison has been made with the following 1:24,000-scale, U.S. Geological Survey quadrangles:

Whitefish Point, Michigan, 1951  
Vermilion, Michigan, 1951  
Shelldrake, Michigan, 1951, Photorevised 1975

47. COMPARISON WITH NAUTICAL CHARTS

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

14962, 17th Edition (October 12, 1985), scale 1:120,000.

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

Submitted by,

*Ted Doyle*

*Douglas Graham*

Ted Doyle and  
Douglas Graham  
Cartographers

Approved and Forwarded:

*John A. Mooney*

John A. Mooney  
Chief, Special Projects Unit

GEOGRAPHIC NAMES

FINAL NAME SHEET

CM-8511 (Crisp Point to Nadoway Point, Lake Superior, MI)

TP-01396

Little Lake

Marsh Lakes

McMullan Lakes

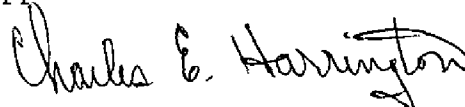
Superior, Lake

Whitefish Bay

Whitefish Point

Whitefish Point (locality)

Approved:



Charles E. Harrington  
Chief Geographer  
Nautical Charting Division

FINAL REVIEW REPORT  
TP-01396 and 1:5,000-scale inset

61. GENERAL STATEMENT

Refer to the Summary bound with this Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS-None

63. COMPARISON WITH MAPS OF OTHER AGENCIES

A comparison was made with the following 1:24,000 scale U.S. Geological Survey quadrangles:

Whitefish Point, Michigan, 1951  
Vermilion, Michigan, 1951  
Shelldrake, Michigan, 1951, Photorevised 1975

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS-None

65. COMPARISON WITH NAUTICAL CHARTS

14962, Scale 1:120,000, 17th Edition, dated October 12, 1985.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

This map meets the National Standards of Map Accuracy and requirements specified in the Project Instructions.

Submitted by,

*James E. Schad*

James E. Schad  
Unit Reviewer

Approved for forwarding:

*John A. Mooney*  
Chief, Special Projects Unit

Approved:

*Gary O. Robison, Jr.*  
Chief, Photogrammetric Production Section

*A. J. Bryson*  
Chief, Photogrammetry Branch



# CARTOGRAPHIC FEATURES OF CHARTING INTEREST

1 PAGE 1

PROJECT NUMBER: CM 8511  
 MAP NUMBER: TP-01396  
 LOCALITY, STATE: WHITEFISH POINT, MICHIGAN  
 SCALE: 1:5,000/1:20,000  
 DATUM: N.A. 1927

The following charted landmarks, nonfloating aids to navigation and possible landmark value have been identified and measured during photogrammetric operations. Refer to Nautical Charting Division Standard Digital Data Exchange Format documentation for clarification of NCD Quality (Q.C.) and Cartographic (CARTO) Codes. Please note that cartographic code 993 is a photogrammetric source code for cartographic features of possible landmark value.

FEATURE DESCRIPTION	CARTO CODE	GEOGRAPHIC POSITION			NCD Q.C.	DATE OF LOCATION
		LAT.		LONG.		
WHITEFISH POINT LIGHTHOUSE, 1965 (Whitefish Point Light)	200	46 46 16.00		84 57 26.52	1	06/02/86
WHITEFISH POINT HBR NORTH BKW LIGHT	200	46 45 31.95		84 57 50.15	1	06/02/86
WHITEFISH POINT HBR SOUTH BKW LIGHT	200	46 45 33.33		84 57 53.00	1	06/02/86
WHITEFISH POINT HBR INNER BKW LIGHT	200	46 45 35.67		84 57 53.65	1	06/02/86

-end-

Listing approved by: *James E. School*  
 FINAL REVIEWER

*Nov 9, 1987*  
 DATE

