

TP-01397

TP-01397

| | |
|--|--------------------|
| NOAA FORM 76-35 (6-80) | |
| U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY | |
| <h1>DESCRIPTIVE REPORT</h1> | |
| <i>Map No.</i> TP-01397 | <i>Edition No.</i> |
| <i>Job No.</i> CM-8511 | |
| <i>Map Classification</i> III | |
| <i>Type of Survey</i> SHORELINE | |
| <h2>LOCALITY</h2> | |
| <i>State</i> MICHIGAN | |
| <i>General Locality</i> LAKE SUPERIOR | |
| <i>Locality</i> PARADISE | |
| <div style="border: 1px solid black; padding: 5px; text-align: center;"> 1986 TO 1986 </div> | |
| <h2>REGISTERED IN ARCHIVES</h2> | |
| <i>DATE</i> | |

| | | | | | | | |
|---|--|--|-------------|---|--|--|---|
| NOAA FORM 76-36A (3-72) | | U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN. | | | | | |
| DESCRIPTIVE REPORT - DATA RECORD | | <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>01397</u> MAP EDITION NO. <u>(1)</u> MAP CLASS <u>III</u> JOB <u>XX-CM-8511</u> </td> </tr> </table> | | TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED | SURVEY TP. <u>01397</u> MAP EDITION NO. <u>(1)</u> MAP CLASS <u>III</u> JOB <u>XX-CM-8511</u> | | |
| TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED | SURVEY TP. <u>01397</u> MAP EDITION NO. <u>(1)</u> MAP CLASS <u>III</u> JOB <u>XX-CM-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;"> LAST PRECEDING MAP EDITION </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> | | 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__ |
| 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__ | | | | | | |
| OFFICER-IN-CHARGE Cdr. A. Y. Bryson | | | | | | | |
| I. INSTRUCTIONS DATED | | | | | | | |
| 1. OFFICE | | 2. FIELD | | | | | |
| Aerotriangulation April 20, 1987 Office July 27, 1987 | | Field January 27, 1986 | | | | | |
| 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 Lake Datum (1955) | | | | | |
| 3. MAP PROJECTION Transverse Mercator Projection | | 4. GRID(S) <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">STATE Michigan</td> <td style="width:50%;">ZONE East</td> </tr> <tr> <td>STATE</td> <td>ZONE</td> </tr> </table> | | STATE Michigan | ZONE East | STATE | ZONE |
| STATE Michigan | ZONE East | | | | | | |
| STATE | ZONE | | | | | | |
| 5. SCALE 1:20,000 | | | | | | | |
| III. HISTORY OF OFFICE OPERATIONS | | | | | | | |
| OPERATIONS | | NAME | DATE | | | | |
| 1. AEROTRIANGULATION BY J. Taylor May 1987 METHOD: Analytical LANDMARKS AND AIDS BY N/A | | | | | | | |
| 2. CONTROL AND BRIDGE POINTS PLOTTED BY J. Taylor May 1987 METHOD: Kongsburg Flatbed Plotter CHECKED BY N/A | | | | | | | |
| 3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY D. Graham Aug. 1987 COMPILATION CHECKED BY J. Schad Aug. 1987 INSTRUMENT: Wild B-8 CONTOURS BY N/A SCALE: 1:20,000 CHECKED BY N/A | | | | | | | |
| 4. MANUSCRIPT DELINEATION PLANIMETRY BY D. Graham Oct. 1987 CHECKED BY J. Schad Oct. 1987 METHOD: Smooth Drafting CONTOURS BY N/A 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 J. Schad Oct. 1987 | | | | | | | |
| 8. FINAL REVIEW BY J. Schad Nov 9, 1987 | | | | | | | |
| 9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY J. Schad Nov 10, 1987 | | | | | | | |
| 10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY P. Dempsey Dec 1987 | | | | | | | |
| 11. MAP REGISTERED - COASTAL SURVEY SECTION 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

COMPILATION SOURCES

TP-01397

1. COMPILATION PHOTOGRAPHY

| | | | | | |
|---|---------|---|----------|---|--|
| CAMERA(S) Wild RC-8(E) F/L 152.71mm | | 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 | <input checked="" type="checkbox"/> STANDARD |
| | | | | MERIDIAN 75th | <input type="checkbox"/> DAYLIGHT |
| NUMBER AND TYPE | DATE | TIME | SCALE | STAGE OF TIDE | |
| 86(E) 6215-6219 | 6/02/86 | 15:10 | 1:50,000 | Water level at the time of photography was 601.7 ft. based on gage at Marquette, Michigan. (Sta. #9018) | |

REMARKS

Plane of reference (Low Water Datum) for Lake Superior is 600.0 ft. The shoreline datum is lake level at time of photography.

2. SOURCE OF MEAN HIGH-WATER OR MEAN LOWER LOW-WATER LINE:

The photographs listed above.

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

N/A

4. CONTEMPORARY HYDROGRAPHIC SURVEYS (List only those surveys that are sources for photogrammetric survey information.)

| SURVEY NUMBER | DATE(S) | SURVEY COPY USED | SURVEY NUMBER | DATE(S) | SURVEY COPY USED |
|---------------|---------|------------------|---------------|---------|------------------|
| | | | | | |

5. FINAL JUNCTIONS

| NORTH | EAST | SOUTH | WEST |
|----------|------|----------|----------|
| TP-01396 | N/A | TP-01398 | TP-01395 |

REMARKS

HISTORY OF FIELD OPERATIONS TP-01397

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 16, 1986 |
| | ESTABLISHED BY | J. E. Dunford | May 16, 1986 |
| | PRE-MARKED OR IDENTIFIED BY | J. E. Dunford | May 16, 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 (<i>Triangulation Stations</i>) BY | N/A | |
| | LOCATED (<i>Field Methods</i>) 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 | | 2. VERTICAL CONTROL IDENTIFIED | |
| PHOTO NUMBER | STATION NAME | PHOTO NUMBER | STATION DESIGNATION |
| 86 EC6215 | TARQUAMENON, 1965 AZ MK | | |
| 86 EC6218 | ANDRUS 1965 | | |

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 ☒ NONE 6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

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

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

RECORD OF SURVEY USE

TP-01397

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

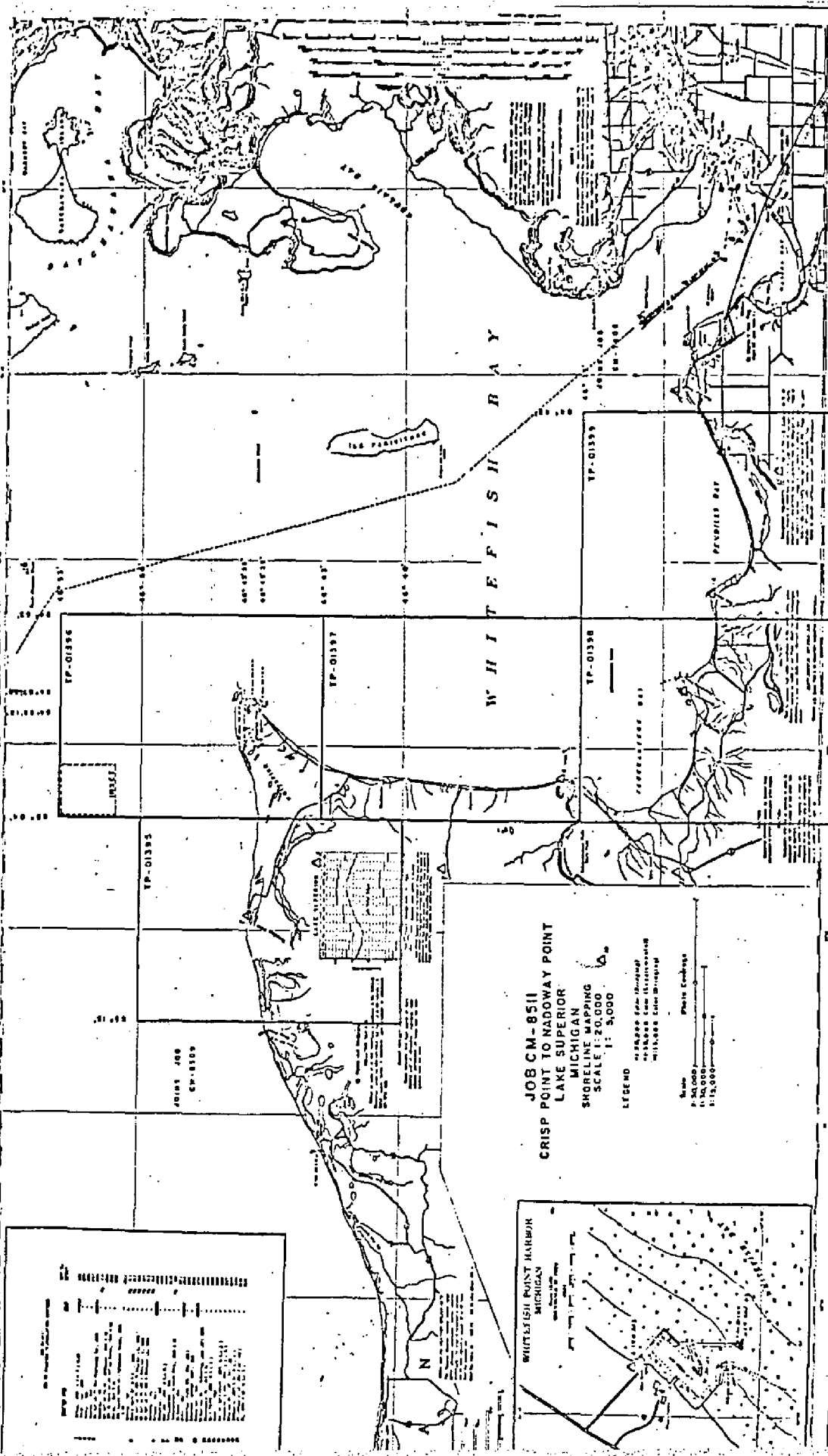
1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☐ COMPUTER READOUTS.
 2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 567 SUBMITTED BY FIELD PARTIES.
 3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
 ACCOUNT FOR EXCEPTIONS:

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 IN FEET



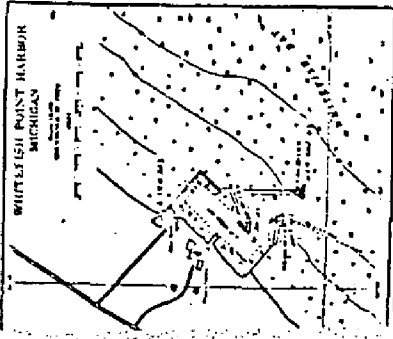
| SOUNDINGS IN FEET | |
|-------------------|-----|
| 1 | 2 |
| 3 | 4 |
| 5 | 6 |
| 7 | 8 |
| 9 | 10 |
| 11 | 12 |
| 13 | 14 |
| 15 | 16 |
| 17 | 18 |
| 19 | 20 |
| 21 | 22 |
| 23 | 24 |
| 25 | 26 |
| 27 | 28 |
| 29 | 30 |
| 31 | 32 |
| 33 | 34 |
| 35 | 36 |
| 37 | 38 |
| 39 | 40 |
| 41 | 42 |
| 43 | 44 |
| 45 | 46 |
| 47 | 48 |
| 49 | 50 |
| 51 | 52 |
| 53 | 54 |
| 55 | 56 |
| 57 | 58 |
| 59 | 60 |
| 61 | 62 |
| 63 | 64 |
| 65 | 66 |
| 67 | 68 |
| 69 | 70 |
| 71 | 72 |
| 73 | 74 |
| 75 | 76 |
| 77 | 78 |
| 79 | 80 |
| 81 | 82 |
| 83 | 84 |
| 85 | 86 |
| 87 | 88 |
| 89 | 90 |
| 91 | 92 |
| 93 | 94 |
| 95 | 96 |
| 97 | 98 |
| 99 | 100 |

JOB CM-8511
CRISP POINT TO NADOWAY POINT
LAKE SUPERIOR
MICHIGAN
SHORELINE MAPPING
SCALE 1:20,000
1: 3,000

LEGEND
Hatched Area (Shaded)
Hatched Area (Unshaded)
Hatched Area (Striped)

Scale
1:20,000
1:10,000
1:5,000

Photo Contours



14062
UNCLASSIFIED
DATE 08-01-2000

(St. Mary River to St. Ignace, Mich.)



U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON, D.C. 20540

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT
TP-01397

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-01397, 1:20,000 scale, 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-01397

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

| STATION NAMES | POINT NUMBER | VALUES IN FEET | |
|--|-----------------|----------------|------|
| | | X | Y |
| <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 |

2

| | | | |
|---------------------|----------|------|------|
| 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

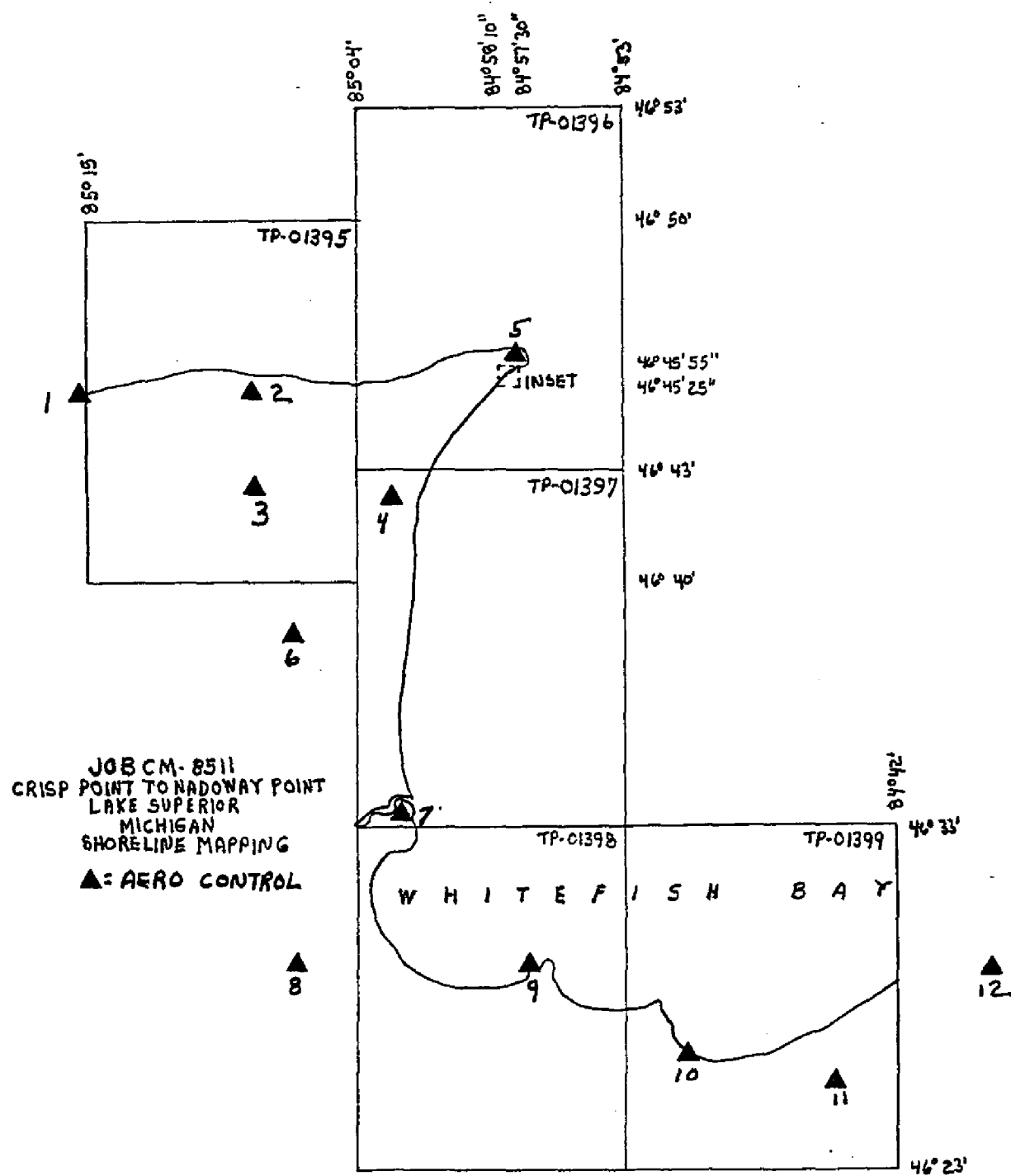
| | | | |
|-----------------------------|----------|------|------|
| Tie From Strip 50-3 | 206801 | 2.0 | -3.8 |
| Tie From Strip 50-3 | 206802 | 2.2 | -5.1 |
| Tie From Strip 50-3 | 206803 | 3.6 | -5.3 |
| Sub Station #8 TP | ▲ 213101 | -0.2 | 0.9 |
| Tahquamenon, 1965, Az. Mk. | | | |
| Sub Station #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 |

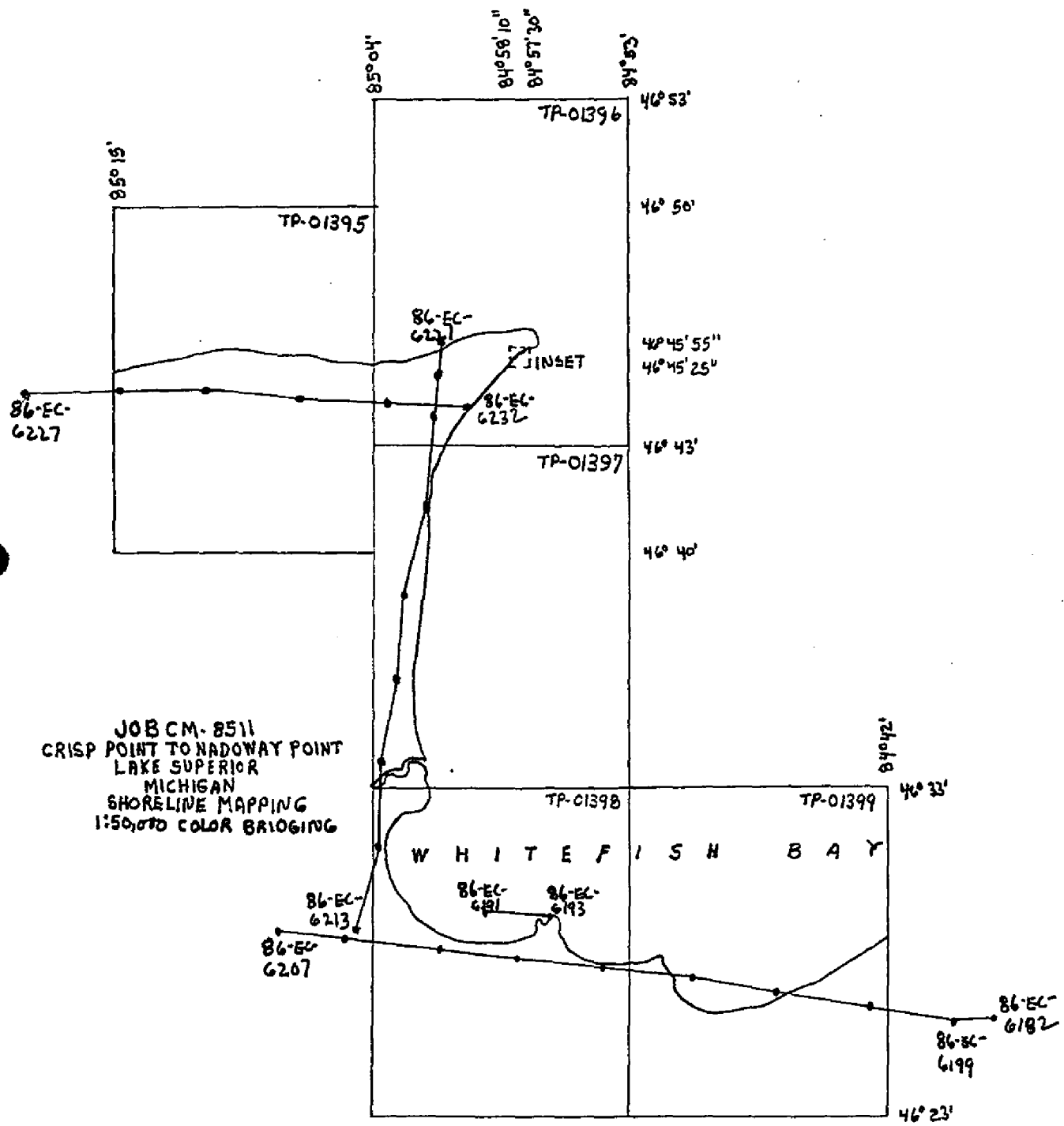
COLOR BRIDGING RATIO VALUE
CM-8511

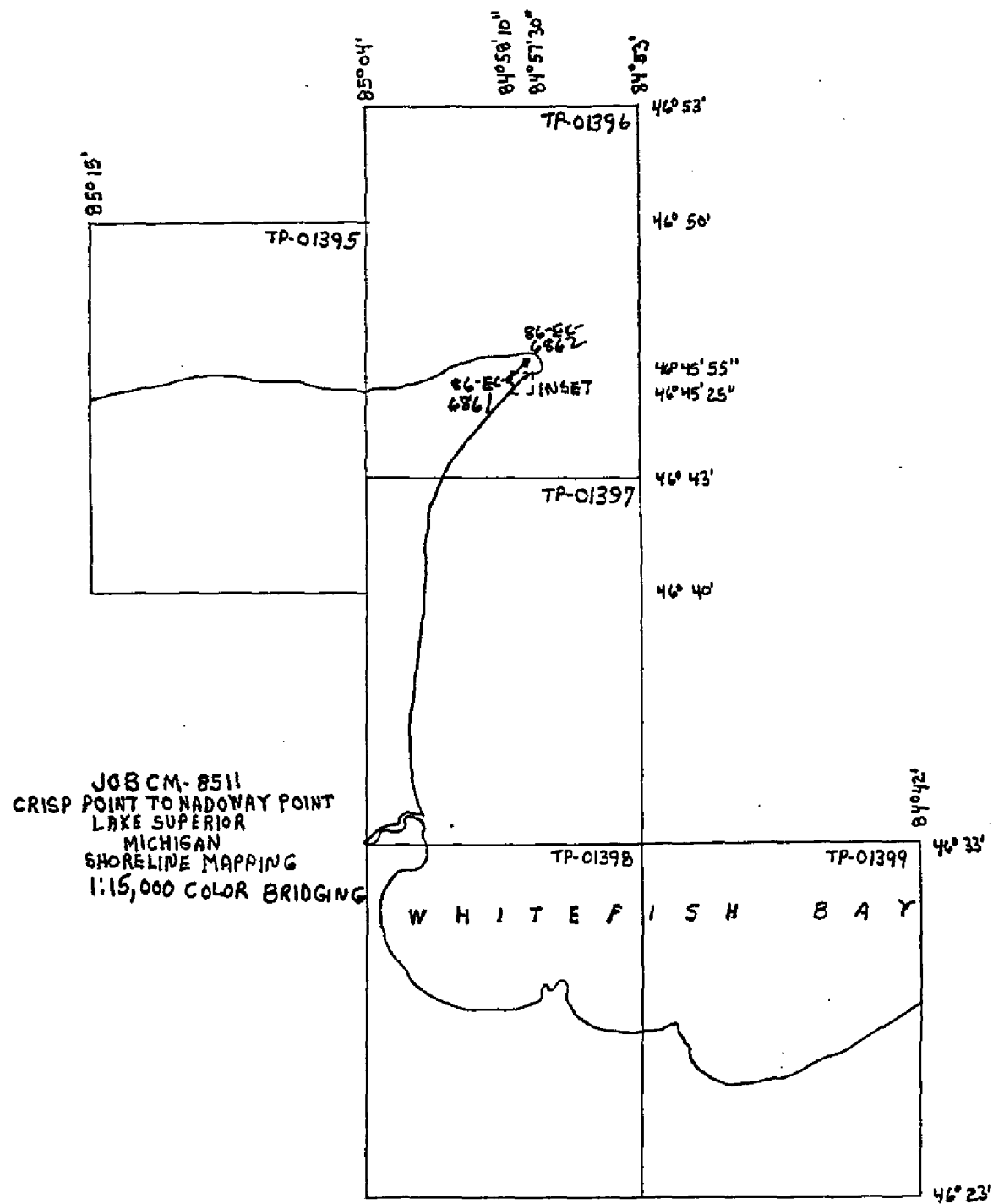
| | |
|----------------------|--------------------|
| 86-EC-6191 and 6193 | Ratio <u>2.580</u> |
| 86-EC-6200 thru 6205 | Ratio <u>2.568</u> |
| 86-EC-6213 thru 6221 | Ratio <u>2.581</u> |
| 86-EC-6228 thru 6231 | Ratio <u>2.583</u> |
| 86-EC-6861 and 6862 | Ratio <u>2.980</u> |

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 |
| Andrus, 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 |







DESCRIPTIVE REPORT CONTROL RECORD

| MAP NO. | STATION NAME | 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> | NA <u>1927</u> | ϕ LATITUDE λ LONGITUDE | ORIGINAL PROJECT Unit: 1 pp Rockville, MD | |
| TP-01397 | TAHQAMENON, 1965 AZ MK | CM 8511 | CSI Field Binder | 215100 | x=157,365.1464 | NA 1927 | ϕ 46 33 37.6535 | | |
| | | | | | y=1,847,587.9190 | λ 85 01 43.3833 | | | |
| | ANDRUS, 1965 | | CSI Field Binder | 218100 | x=155,192.8956 | | ϕ 46 42 21.3486 | | |
| | | | | | y=1,900,692.1216 | λ 85 02 27.7118 | | | |
| | | | | | x= | | ϕ | | |
| | | | | | y= | | λ | | |
| | | | | | x= | | ϕ | | |
| | | | | | y= | | λ | | |
| | | | | | x= | | ϕ | | |
| | | | | | y= | | λ | | |
| | | | | | 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 | |
| LISTED BY | D. Norman | | | | LISTING CHECKED BY | | | DATE | |
| HAND PLOTTING BY | | | | | HAND PLOTTING CHECKED BY | | | DATE | |

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

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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 ramps, groins, piers, and ruins. Shoreline and alongshore delineation was compiled as described in item 31 of this report.

36. OFFSHORE DETAIL

Offshore detail consisted of rocks, an obstruction, a platform, and a pile. Offshore detail was compiled by instrument methods as described in item 31 of this report.

37. LANDMARKS AND AIDS

There are no landmarks and aids within the limits of this map.

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:

Emerson, Michigan, 1951, Photorevised 1975
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,

Douglas Graham
Douglas Graham
Cartographer

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-01397

Black Creek

Emerson

O'Briens Creek

Paradise

Shelldrake

Shelldrake Lake

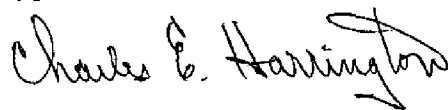
Shelldrake River

Tahquamenon River

Warners Lake

Whitefish Bay

Approved:



Charles E. Harrington
Chief Geographer
Nautical Charting Division

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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:

Shelldrake, Michigan 1951, Photorevised 1975
Emerson, 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:

Jerry O. Roberson, Jr.
Chief, Photogrammetric Production Section

A. Y. Bryson
Chief, Photogrammetry Branch

CARTOGRAPHIC FEATURES OF CHARTING INTEREST

1 PAGE 1

PROJECT NUMBER: CM 8511
 MAP NUMBER: TP-01397
 LOCALITY, STATE: PARADISE, MICHIGAN
 SCALE: 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. | | |
| TAHQUAMENON RIVER ENTRANCE LIGHT 1 -end- | 200 | 46 33 35.2 | 85 00 02.7 | 4 | 6/27/78 |

Listing approved by: James E Schad
 FINAL REVIEWER

Nov 9, 1987
 DATE

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO.

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Leave any gaps in the topographic survey open and do not attempt to fill them in on the instructor's chart.
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.

[illegible]