

TP-01086

TP-01086

NOAA FORM 76-35

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

DESCRIPTIVE REPORT

Type of Survey Shoreline

Job No. CM-8008 Map No. TP-01086

Classification No. Final Edition No. 1

Field Edited

LOCALITY

State ... Minnesota-Wisconsin

General Locality ... Superior Entry

Locality ... Superior Bay to Allouez Bay

1980 TO 1981

REGISTRY IN ARCHIVES

DATE

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED		SURVEY TP. <u>01086</u> MAP EDITION NO. <u>(1)</u> MAP CLASS <u>Final</u> JOB <u>PH-CM-8008</u>	
DESCRIPTIVE REPORT - DATA RECORD							
PHOTOGRAMMETRIC OFFICE Photogrammetry Division Rockville, MD				LAST PRECEDING MAP EDITION TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED			
OFFICER-IN-CHARGE Walter S. Simmons				JOB <u>PH-</u> MAP CLASS <u>Final</u> SURVEY DATES: 19__ TO 19__			

I. INSTRUCTIONS DATED	
1. OFFICE	2. FIELD
Aerotriangulation - October 16, 1980	Field - April 17, 1982

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
3. MAP PROJECTION Lambert Conformal	4. GRID(S) STATE <u>Wisconsin</u> ZONE <u>North</u>
5. SCALE 1:5,000	STATE _____ ZONE _____

III. HISTORY OF OFFICE OPERATIONS		
OPERATIONS	NAME	DATE
1. AEROTRIANGULATION BY <u>Analytic</u>	<u>R. Kelly</u>	<u>Dec 1980</u>
METHOD: <u>Analytic</u> LANDMARKS AND AIDS BY		
2. CONTROL AND BRIDGE POINTS PLOTTED BY <u>J. Taylor</u>	<u>J. Taylor</u>	<u>Jan 1981</u>
METHOD: <u>Calcomp</u> CHECKED BY		
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY <u>J. Schad</u>	<u>J. Schad</u>	<u>Feb 1981</u>
COMPILATION CHECKED BY <u>C. Lewis</u>	<u>C. Lewis</u>	<u>Mar 1981</u>
INSTRUMENT: <u>Wild B-8</u> CONTOURS BY <u>NA</u>	<u>NA</u>	
SCALE: <u>1:5,000</u> CHECKED BY <u>NA</u>	<u>NA</u>	
4. MANUSCRIPT DELINEATION PLANIMETRY BY <u>J. Schad</u>	<u>J. Schad</u>	<u>Mar 1981</u>
CHECKED BY <u>C. Lewis</u>	<u>C. Lewis</u>	<u>Mar 1981</u>
METHOD: <u>Graphically Smooth Drafted</u> CONTOURS BY <u>NA</u>	<u>NA</u>	
CHECKED BY <u>NA</u>	<u>NA</u>	
SCALE: <u>1:5,000</u> HYDRO SUPPORT DATA BY <u>C. Lewis</u>	<u>C. Lewis</u>	<u>Mar 1981</u>
CHECKED BY <u>J. Schad</u>	<u>J. Schad</u>	<u>Apr 1981</u>
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY <u>C. Lewis</u>	<u>C. Lewis</u>	<u>Apr 1981</u>
6. APPLICATION OF FIELD EDIT DATA BY <u>J. Schad</u>	<u>J. Schad</u>	<u>Aug 1981</u>
CHECKED BY <u>F. Wright</u>	<u>F. Wright</u>	<u>Aug 1981</u>
7. COMPILATION SECTION REVIEW BY <u>F. Wright</u>	<u>F. Wright</u>	<u>Aug 1981</u>
8. FINAL REVIEW BY <u>R. Kelly</u>	<u>R. Kelly</u>	<u>June 1982</u>
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY <u>R. Kelly (signed)</u>	<u>R. Kelly (signed)</u>	<u>June 1982</u>
11. MAP REGISTERED - COASTAL SURVEY SECTION BY <u>Howard D. Wolfe</u>	<u>Howard D. Wolfe</u>	<u>Oct 4 1983</u>

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

COMPILATION SOURCES

TP-01086

1. COMPILATION PHOTOGRAPHY

CAMERA(S) Wild RC-8(E) Focal Length = 152.71 mm		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 Central	<input type="checkbox"/> STANDARD
				MERIDIAN 75th	<input checked="" type="checkbox"/> DAYLIGHT
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
E(C) 5761-5763	8/31/80	10:07	1:15,000	+1.0 feet Lake Superior Low Water Datum	

REMARKS

Lake Superior Low Water Datum = 600.00 feet

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

Shoreline was compiled from the above listed photographs and represents the visible line of contact between the water level and land features.

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

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 No Contemporary Survey	EAST No Contemporary Survey	SOUTH No Contemporary Survey	WEST TP-01085
------------------------------------	-----------------------------------	------------------------------------	------------------

REMARKS

NOAA FORM 76-36C
(3-72)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEYTP-01086
HISTORY OF FIELD OPERATIONSI. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	CDR Frank P. Rossi	NA
2. HORIZONTAL CONTROL	E. Steigerwald	7/81
RECOVERED BY		
ESTABLISHED BY		
PRE-MARKED OR IDENTIFIED BY		
3. VERTICAL CONTROL	NA	
RECOVERED BY		
ESTABLISHED BY		
PRE-MARKED OR IDENTIFIED BY		
4. LANDMARKS AND AIDS TO NAVIGATION	E. Steigerwald, L. Neterer	6/81
RECOVERED (Triangulation Stations) BY		
LOCATED (Field Methods) BY		
IDENTIFIED BY		
5. GEOGRAPHIC NAMES INVESTIGATION		
TYPE OF INVESTIGATION		
<input type="checkbox"/> COMPLETE		
<input type="checkbox"/> SPECIFIC NAMES ONLY		
<input checked="" type="checkbox"/> NO INVESTIGATION		
6. PHOTO INSPECTION	E. Steigerwald, L. Neterer	6/81
CLARIFICATION OF DETAILS BY		
7. BOUNDARIES AND LIMITS	NA	
SURVEYED OR IDENTIFIED BY		

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED		2. VERTICAL CONTROL IDENTIFIED	
NA		NA	
PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION

3. PHOTO NUMBERS (Clarification of details)

80EC5762

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME
80EC5762	Towers (8)	3762	Allouez Ore Dock #3 West & East Lights
5762	South Breakwater Light		
5762	North Breakwater light	5762	Superior Front Channel Range Rear Light
5762	Inner North Pierhead Light		
5762	Inner South Pierhead Light		
5762	Superior Harbor Basin Light 1		

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)

Master Field Edit Print, Plane Table Print, Photos 80EC5762, Form 76-40's (2), Field Edit Report. (6 NOAA Form 76-109), photos 82 ZC 2927 thru 2934 and 1 package field computations.

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

RECORD OF SURVEY USE

TP-01086

I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Shoreline, offshore and alongshore hydro position	Mar 81	Class III Manuscript		Apr 14, 81
Field Edit Applied	Aug 81	Class I Manuscript Pending Final Review		
Field Edit Unreviewed		Class I Manuscript Pending Final Review		May 1982
Final Review	May 1982	Final Map	Aug 1982	July 1982

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
Pages 4	76-40(S)	Aug 1982	

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 **

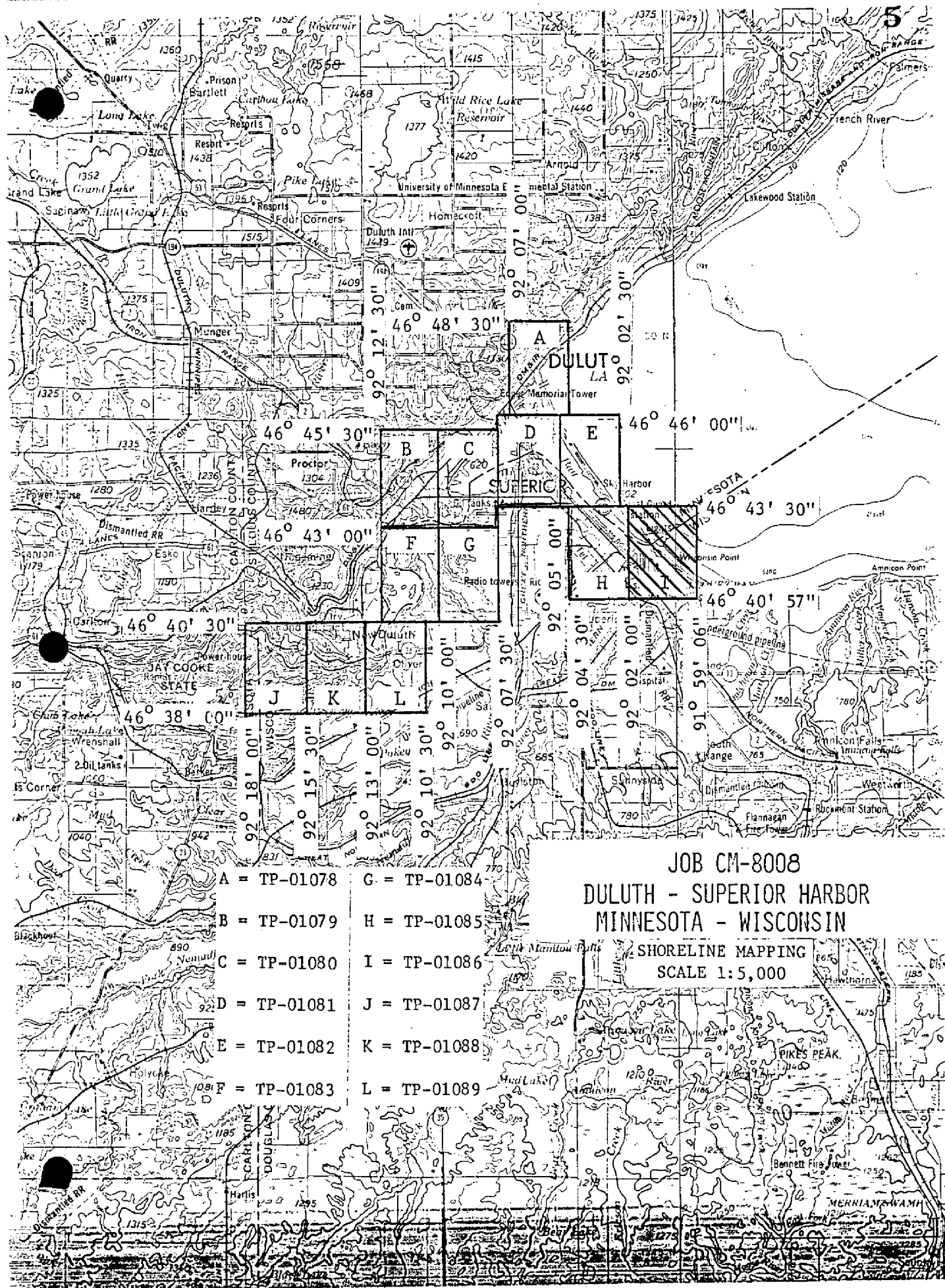
1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☐ COMPUTER READOUTS.
 2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 567 SUBMITTED BY FIELD PARTIES.
 3. ☐ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.

** All indicated data will be forwarded to the Federal Record Center upon completion of the entire project.

4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: September 14, 1982

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 - _____	<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 - _____	<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 - _____	<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	



Summary

TP-01086

This map is one of twelve 1:5,000 scale shoreline maps that comprise Job CM-8008. The purpose of this job is to provide contemporary shoreline data for the support of hydrographic operations and to furnish data for nautical chart revision.

This map portrays the shoreline and alongshore detail of Duluth Superior Harbor, Minnesota and Wisconsin.

Field operations were not planned for TP-01078 through TP-01082, TP-01085 and TP-01086 prior to aerotriangulation. It was anticipated that geodetic intersection stations and photo points established in 1972, by the Lake Survey for CM-7313, TP-00680 be used for horizontal control. In May 1981 field operations provided horizontal control for the lower portion of CM-8008 for the aerotriangulation of TP-01083, TP-01084 and TP-01087 through TP-01089.

Natural color photographs were taken August 31, 1980, with the Wild RC-8(E) camera at 1:15,000 scale which were provided to aerotriangulation and compilation.

Aerotriangulation was performed at the Washington Science Center, Rockville, Maryland. The 1:15,000 natural color photographs were bridged using analytic aerotriangulation methods.

Compilation was performed at the Washington Science Center, Rockville, Maryland, by the Coastal Mapping Section. The interior was limited to detail to the first road adjacent to the shoreline. Detail within this area was kept to a minimum.

Field edit was performed in June 1981 by personnel assigned to the Atlantic Marine Center. Refer to the Field Edit Report bound with this Descriptive Report.

Application of field edit was performed at the Washington Science Center, Rockville, Maryland.

Final Review for this map was performed at the Washington Science Center, Rockville, Maryland, in May 1981. This map complies with the National Standards of Map Accuracy.

A chart Maintenance Print was prepared during the final review and forwarded to the Marine Chart Division. Also, a print copy with notes to the hydrographer was forwarded to the Hydrographic Survey Division, which supercedes the Class III print forwarded April 1981. Accompanying the

above forwarded print copies, are 76-40 forms, listings of landmarks and nonfloating aids to navigation.

The context of this Descriptive Report contains all pertinent reports and listings of data used to compile this Final Map.

A stable base positive copy of this Final Map and the Descriptive Report will be registered in the NOS Archives.

See Addendum to Photogrammetric Plot Report for the accuracy of control of the southern half of this map.

FIELD INSPECTION

TP-01086

There was no field inspection prior to compilation. Field work accomplished was limited to the photo coverage for aerotriangulation and compilation.

Photogrammetric Plot Report

Duluth-Superior Harbor
Minnesota-Wisconsin

CM-8008
December 1980

21. Area Covered

This report covers seven 1:5,000 scale sheets, TP-01078, TP-01079, TP-01080, TP-01081, TP-01082, TP-01085 and TP-01086 of Duluth-Superior Harbor, Minnesota-Wisconsin.

22. Method

Four strips of 1:15,000 scale photography were bridged by analytic aerotriangulation methods and adjusted to ground on the Wisconsin State Plane Coordinate System, Wisconsin North Zone. These four strips provided horizontal and vertical control for compilation. Aids and landmarks were located during the bridging. Using photo control point 31 South Cover Land Spit (761831) as a terminal control point to adjust strip three, it was determined that there is some field discrepancy in the position of this point. Strip three was again adjusted using photo point 35 South Breakwater Light (762804) as a terminal control point. In this adjustment a position for tie point 761804 was established to be used as a terminal control station in adjusting strip four.

Since 761831 is common to strips three and four, strip four was bridged measuring 761831 to provide a terminal control point position for adjusting strip three.

23. Adequacy of Control

Photo control points position within 1.0 and 2.0 meters provided by Great Lakes Revisory Section, geodetic control and tie points were office identified. Although, control held within the accuracy required by National Standards of Maps at 1:15,000 scale, it did not meet NOS requirements. To meet NOS requirements it will be necessary for a photo field party to establish and photoidentify control or to panel control and refly the project.

24. Supplemental Data

Local shoreline and US Geological Survey quadrangles were used to provide vertical elevations for vertical adjustments of bridges.

25. Photography

RC-8 E_C photography was used for the four bridging strips. Photography was adequate as to coverage and definition.

Submitted by,

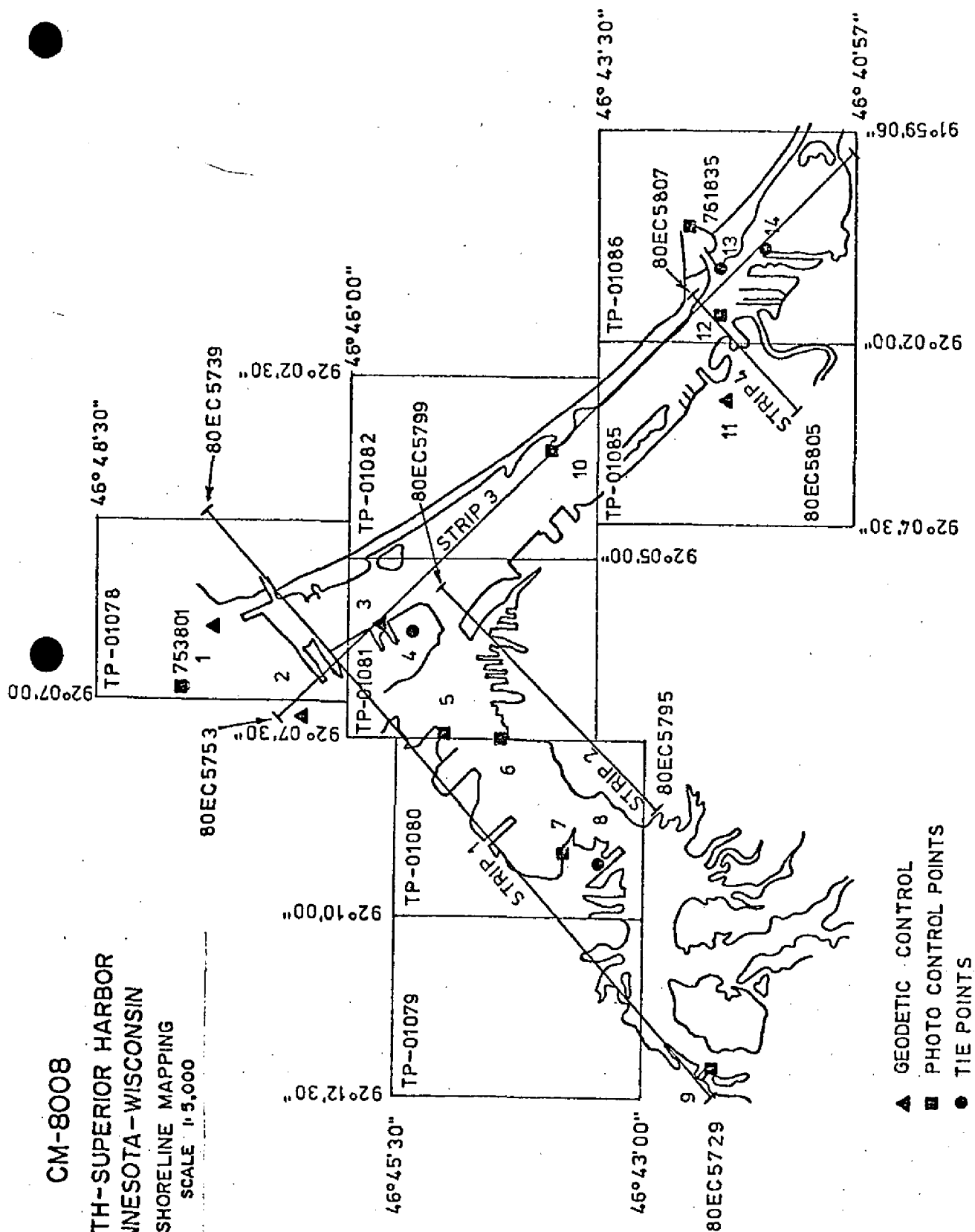
Robert B. Kelly
Robert B. Kelly

Approved and Forwarded:

Don O. Norman

Don O. Norman
Chief, Aerotriangulation Section

CM-8008

DULUTH-SUPERIOR HARBOR
MINNESOTA-WISCONSINSHORELINE MAPPING
SCALE 1"=5,000'

Closures to Control
(in feet)

Strip 1

	X	Y
729870 South Corner Middle Dock	0.0	0.1
733862 Minn. Power & Light Co. Tk.	-0.3	-1.0
735856 West Corner Lakehead Dock	0.1	1.1
738103 Duluth Centrol High Sch. Cupola Spire	0.0	-0.2

Strip 2

732801 Tie Point	0.0	0.0
797849 West Corner Superior Terminal Dock	0.0	0.0
799801 Tie Point	0.0	0.0

Strip 3

753120 Duluth Enger Memorial Tower	-0.3	-0.1
736110 Duluth Peavey Elevator Co. Stack, 1921	1.2	0.4
759817 Corner Park Dock	-3.0	0.1
806137 Superior St. Francis Xavier Cath. Church Spire, 1952	2.9	0.9
763831 Tie Point	-0.8	-1.3

Strip 4

806137 Superior St. Francis Xavier Cath. Church Spire, 1952	0.0	0.0
761843 End Northern Pacific Ry Wall	0.0	0.0
761804 Tie Point	0.0	0.0

ADDENDUM TO CM-8008
DULUTH-SUPERIOR HARBOR
MINNESOTA-WISCONSIN
APRIL 1981

Strip three was remeasured and adjusted to determine positions for hydrographic points and additional landmarks.

Strip four should not be used, because of inadequacy of control.

CLOSURES TO CONTROL FOR STRIP THREE

	X	Y
753801 DULUTH TV STA. WEBC MAST	-1.7	2.3
736120 DULUTH ENGER MEMORIAL TOWER	1.2	-1.3
736110 DULUTH PEAVEY ELEVATOR CO. STACK, 1921	3.2	-1.0
759817 CORNER PARK DOCK	-4.0	-0.3
806137 SUPERIOR ST. FRANCIS XAVIER CATH. CHURCH SPIRE, 1952	1.3	-0.3
761835 SOUTH BREAKWATER LIGHT	1.3	0.4

ADDENDUM TO PHOTOGRAMMETRIC PLOT REPORT
TP-01086

Horizontal control was established by personnel from NOAA Ship PEIRCE during the summer of 1982 to determine the accuracy of the southern half of this map where compilation had been extended beyond available control. This control was identified on 1982 color photographs at a scale of 1:30,000; exposures 82-ZC-2928 through 2930.

Model 2929 and 2930, where most of the control was located, was set, and supplemental points located to help control model 2928 and 2929, which covered the area in question. This model was first set using stations Dogg, Cross, and four supplemental points letting station AO-1 float. The substations of AO-1 held to within 3 feet. A strip adjustment was then performed on this model incorporating station AO-1. See copy of printout for results.

Selected detail was then drawn on top of the original manuscript for comparison. There was no major difference except for some portions of the shoreline which differed up to 50 feet. This difference was due to the shoreline changing and not to compilation error. The difference between roads and railroads varied from 0 to 10 feet, which substantiates the original report that this map meets National Standards of Map Accuracy, but not NOS standards.

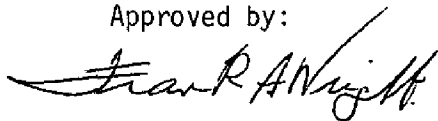
All photogrammetric work was performed on the NOSAP instrument.

Submitted by:



James Schad

Approved by:



Frank Wright
Chief, Coastal Mapping Unit

135

POINT	X COORD.	Y COORD	Z COORD.	X RES	Y RES	Z :
5804DOGG	487775.	558058.	9900000000.	-1.22	1.27	
00002901	484405.	553908.	9900000000.	0.74	-0.64	
05805CR1	490198.	560296.	9900000000.	-0.29	-0.45	
00002902	491893.	559708.	9900000000.	1.32	0.46	
02929633	494861.	561707.	9900000000.	-0.31	0.34	
02929631	498130.	565522.	9900000000.	1.01	-0.31	
05763632	499558.	564180.	9900000000.	-1.92	-0.23	
NEARDRVE	504676.	557154.	9900000000.	-1.26	-2.02	
OFARDRVE	504698.	556941.	9900000000.	2.27	-1.47	
0000TREE	504607.	557222.	9900000000.	-0.19	3.07	
AD1FENCE	505040.	559935.	9900000000.	-0.15	-0.03	
000VERT1	9900000000.	9900000000.	601.00			C
000VERT2	9900000000.	9900000000.	601.00			C
000VERT3	9900000000.	9900000000.	601.00			C
000VERT4	9900000000.	9900000000.	601.00			C

ADJUSTED VALUES OF STRIP COORDINATES model 2928 & 2929

POINT	X COORD.	Y COORD	Z COORD.
001-0001	505044.	559925.	611.33
001-0002	497958.	555039.	663.32
001-0003	490397.	546048.	711.32
001-0004	488529.	548714.	695.09
001-0005	494950.	556295.	662.55
001-0006	500825.	563109.	604.20
001-0007	497758.	565944.	598.56
001-0008	491436.	561095.	638.46
001-0009	484404.	553908.	665.59
001-0021	484407.	553908.	668.36
001-0022	487776.	558058.	657.80
001-0023	490199.	560297.	641.38
001-0024	491894.	559708.	689.72
001-0025	494861.	561707.	607.74
001-0026	498131.	565520.	601.15
001-0027	498437.	565436.	595.40
001-0028	504784.	560324.	601.76
001-0029	486136.	557993.	597.20
5804DOGG	487774.	558059.	656.73
00002901	484406.	553908.	666.20
000VERT1	483166.	554005.	601.00
05805CR1	490198.	560296.	640.86
00002902	491895.	559708.	689.11
02929633	494860.	561708.	607.31
000VERT2	494895.	561722.	601.00
02929631	498131.	565521.	598.80
000VERT3	498248.	565632.	601.00
05763632	499556.	564180.	605.50
NEARDRVE	504675.	557152.	650.69
OFARDRVE	504700.	556940.	651.20
0000TREE	504607.	557225.	653.30
AD1FENCE	505040.	559935.	607.55
000VERT4	504820.	560289.	601.00

Compilation Report

TP-01086

31. Delineation

This map manuscript was compiled using the B-8 stereoplotter and holding to pass points established by the Aerotriangulation Section. The limits of detail shown is to the first main road adjacent to the shoreline. Detail within this area was kept to a minimum (Refer to Item 46).

32. Control

See the Aerotriangulation Report for the adequacy of horizontal control. Vertical control was taken from USGS quads and was used in the leveling of the stereomodels.

33. Supplemental Data

None

34. Contours and Drainage

Contours are not applicable. Drainage was compiled from office interpretation of the photos.

35. Shoreline and Alongshore Details

The shoreline and alongshore details shown on this manuscript represent the lake level at the time of photography. The lake level at time of photography was one (1) foot above the Lake Superior Low Water Datum. All shoreline and alongshore features are from office interpretation of these photographs.

36. Offshore Details

Offshore detail compiled; areas of grass in water, piling, and rocks will be verified by field party.

37. Landmarks and Aids

The positions of six (6) aids to navigation were determined by Aerotriangulation and four (4) are to be located by the field party. Eight (8) landmarks were identified on this manuscript during compilation (See NOAA Form 76-40).

38. Control for Future Surveys

Photo-hydro points were established by compilation section and position determined by analytical methods. These positions are to be given to the hydro-field party, (copy bound with this report).

39. Junctions

TP-01086 junctions with TP-01085 to the west. There are no junctions to the north, south or east of this map.

40 through 45. Inapplicable46. Comparison with Existing Maps

During compilation a continuous comparison was made with TP-00680. This survey was compiled at a scale of 1:15,000 using the format from Chart 14975 and is intended as a new base for this chart, but has yet to be applied. Although, some duplication of features exist, the interior detail shown on TP-01086 consist mainly of features that have been constructed or changed since TP-00680 was compiled. TP-01086 is not intended to supersede the interior portion of TP-00680, but should be used only to add those new features compiled. Comparison was made with the following USGS 7.5 minute quads:

Superior, Wisc-Minn, 1954 photorevised 1969-1975, scale 1:24,000
Parkland, Wisc-Minn, 1954 photorevised 1975, scale 1:24,000

47. Comparison with Nautical Charts

Comparison was made with Nautical Chart 14975, scale 1:15,000, 26th Edition, April 26, 1980.

Items to be applied to Nautical Chart immediately - None

Items to be carried forward - None

Submitted by,

James Schad

James Schad

Approved and Forwarded:

Frank Wright

Frank Wright
Chief, Coastal Mapping Section

ADDENDUM TO COMPILATION REPORT

Photogrammetric data previously furnished (during the 1981 field season) for use as possible hydrographic control signal sites in the Duluth-Superior Harbor area should not be used and was not bound with this report.



Robert B. Kelly
June 8, 1982

FIELD EDIT REPORT
TP-01086

51. Method

A 19 foot MonArk outboard boat was used to inspect the entire shoreline from the water. All changes were noted on the master field edit print and photograph 80EC5762. A plane table survey was used to verify landmarks and fixed aids to navigation.

52. Adequacy of Compilation

Compilation of this manuscript was very good. The scale of the photography, and the fact that it was flown so recently helped make the field edit go smoothly. The biggest discrepancy was in areas which had been compiled as grassy areas, but turned out to be simply shallow water. There were also some minor discrepancies in the shoreline interpretation of areas in ruin, but these were easily resolved by field inspection.

53. Map Accuracy

Refer to Photogrammetric Plot Report, CM-8008 for statement of map accuracy of horizontal control.

54. Recommendations

Photo centers should be shown on all manuscripts. This will make it easier for the field editor to orient the photos, and to determine which photos to use to locate features.

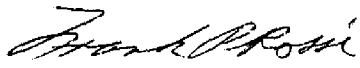
Some chronopaque photos for this manuscript were not sent with the project. All these photos should be supplied.

Assistance with field edit by office compilers should be continued. Office personnel will benefit from the field experience, and can offer valuable expertise to the ships.

55. Examination of Proof Copy

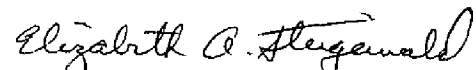
No statement.

Chief of Party


CDR Frank P. Rossi

Respectfully submitted,


Lowell O. Neterer, Jr.


ENS Elizabeth A. Steigerwald

Review Report
Shoreline Survey
TP-01086

61. General Statement

A final review was performed for this shoreline map. No major discrepancies were encountered. Bulkheads in ruins and Pilings were used interchangeable by the field person. Any ruins forming the shoreline were labeled Bulkhead ruins. Ruins not touching the shoreline were labeled Piling. Both are shown by the standard dash line symbol. The cultural feature name, Piling in ruins, was not used.

Duck blinds are shown using the solid building symbols and are not classified as ruins, because the structures are generally rebuilt prior to the annual hunting season.

62. Comparison with Registered Topographic Surveys - None

63. Comparison with Maps of Other Agencies

Refer to the Compilation Report, paragraph 46, bound with this Descriptive Report.

64. Comparison with Contemporary Hydrographic Survey - None

65. Comparison with Nautical Charts

Refer to the Compilation Report, paragraph 47, bound with this Descriptive Report.


66. Adequacy of Results and Future Surveys

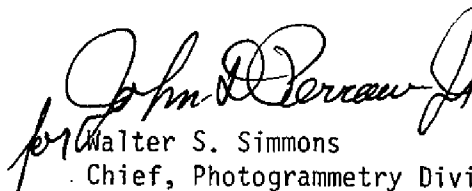
This map complies with photogrammetric instructions for shoreline mapping and meets accuracy required by National Standards of Maps.

Submitted by,


Robert B. Kelly
Final Reviewer

Approved:


George M. Ball
Chief, Photogrammetric Branch


Walter S. Simmons
Chief, Photogrammetry Division

June 3, 1982

GEOGRAPHIC NAMES

FINAL NAME SHEET

CM-8008, (Duluth-Superior Harbor, Minn. - Wis.)

TP-01086

Allouez

Allouez Bay

Bear Creek

Bluff Creek

Burlington Northern (RR)

Hog Island

Lake Superior

Minnesota Point

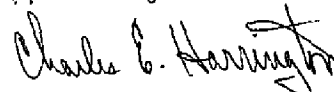
Nemadji River

Superior Bay

Superior Entry

Wisconsin Point

Approved by:



Charles E. Harrington
Chief Geographer, OA/C3x5

Information on Dissemination of Project Material

CM-8008

Duluth-Superior Harbor Minnesota & Winconsin

National Archives/Federal Record Center

Aerotriangulation Photographs

Plot Report

Computer Printouts

Control Identification Cards (Horizontal)

NOAA Form(s) 76-41 (Descriptive Report Control Record)

Master Field Edit Sheets

Project Diagrams

Listing of Hydrographic Control Points

Listing of Plotted Points

Ratio Photographs

Bureau Archives

Registered Maps

Descriptive Reports

Reproduction Division

8X Reduction Negative of Each Map

Office of Staff Geographer

Geographer Names Standard

Marine Chart Division

Chart Maintenance Print

76-40
LISTING
PHOTOGRAMMETRIC BRANCH
PHOTOGRAMMETRY DIVISION
NATIONAL OCEAN SURVEY NOAA
DEPARTMENT OF COMMERCE USA
782707
DATATAB

SVY	TP01086	* NONFLOATING AIDS FOR CHARTS	* RPT UNIT	* CMD, ROCKVILLE MD.	* PAGE	2 OF 4
JOB	CM8008	* TO BE REVISED	* STATE	* MINNESOTA-WISCONSIN		
PRJ	.		* LOCALITY	* DULUTH SUPERIOR HBR	* ORIGINATING	ACTIVITY*
DTM	NA1926		* DATE	* 03/27/81	* COMPILATION	*

THE FOLLOWING OBJECTS HAVE NOT BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS *

[illegible]

*	DULUTH-SUPERIOR HARBOR	*	*	*	*
*	SUPERIOR ENTRY	*	*	*	*

LIGHT *	SOUTH BREAKWATER LIGHT
*	* 46 42 36.74 1134.5 NOT * 80EC5762 * V-VIS * 14975 *

	*	92	00	22.22	472.0	DGTZD*	08/31/80	*	07/13/81	*	14966	*
-LIGHT	*											
		*	46	42	42.15	1301.6	NOT *	80EC5762	*	V-VIS	*	14975
	*	*	92	00	27.60	586.2	DGTZD*	08/31/80	*	07/13/81	*	14966

-LIGHT *	INNER NORTH PIERHEAD LIGHT	* 46	42	30.90	954.2	NOT *	80EC5762 *	V-VIS	* 14975
		* 92	00	49.26	1046.4	06T2D*	08/31/80	* 07/13/81	*

* 72 00 42.62	1870.4	06/31/80	*	07/13/81	*
-LIGHT *	INNER SOUTH PIERHEAD LIGHT				
* 46 42 26.75	826.0	NOT *	80EC5762 *	V-VIS *	14975 *
* 92 00 45.05	957.0	CGTZD*	08/31/80 *	07/13/81 *	

1	* 46 42 16.18	499.6	NOT *	80EC5762 *	F-3-7-V *	14975 *
1	* 92 01 00.53	11.3	DGI2D*	08/31/80 *	07/13/81 *	

* * * * *

* * *

[illegible][illegible]

1	*	92 01 20.50	435.5	0GTZD*	* 05/21/81 *	80EC5762
---	---	-------------	-------	--------	--------------	----------

* * *

* *

* *

.

* *

* *

* *

PHOTOGRAMMETRIC BRANCH
PHOTOGRAMMETRY DIVISION

NATIONAL OCEAN SURVEY NOAA
DEPARTMENT OF COMMERCE USA

```

* SVY TP01086 * RPT UNIT CMD, ROCKVILLE MD. * PAGE 3 OF 4 *
* JOB CM8008 * * STATE MINNESOTA-WISCONSIN *
* PRJ * * LOCALITY DULUTH SUPERIOR HBR * ORIGINATING ACTIVITY *
* DTM NA1926 * * DATE 03/27/81 * COMPILATION *
*
* THE FOLLOWING OBJECTS HAVE NOT BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS *
*
* DESCRIPTION * POSITION * CMD * METHOD AND DATE *
* CHARTING* RECORD REASON FOR DELETION * LATITUDE * DM * ALTEK* OF LOCATION * CHARTS *
* NAME * PUT TRIANGULATION NAMES IN ( ) * LONGITUDE * DP * DGTZD* OFFICE * FIELD * AFFECTED*
*
* DULUTH-SUPERIOR HARBOR * * * *
* ALLOUEZ BAY * *
*
* LIGHT * * 00 00 00.00 * .0 NOT * * 14975 *
* * BURLINGTON NORTHERN E. DOCK LT * * 00 00 00.00 * .0 DGTZD* * 07/13/81 *
*
* NOT IN POSITION AT TIME OF * * * *
* FIELD EDIT * *
*
* LIGHT * * 00 00 00.00 * .0 NOT * * 14975 *
* * BURLINGTON NORTHERN W. DOCK LT * * 00 00 00.00 * .0 DGTZD* * 07/13/81 *
*
* NOT IN POSITION AT TIME OF * * * *
* FIELD EDIT * *
*
* SUPERIOR FRONT CHANNEL * * * *
*
* -LIGHT * RANGE REAR LIGHT * * 46 42 16.45 508.0 NOT * * F-3-7-V * 14975 *
* * * * 92 01 53.45 1135.5 DGTZD* * 07/13/81 *
*
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *

```