

TP-00082

TP-00082

NOAA FORM 76-35 (3-76)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
<h2 style="text-align: center;">DESCRIPTIVE REPORT</h2>	
This map edition will not be field edited.	
<b>Map No.</b> TP-00082	<b>Edition No.</b> I
<b>Job No.</b> CM-8316	
<b>Map Classification</b> Class III(Final)	
<b>Type of Survey</b> Shoreline	
<h3 style="text-align: center;">LOCALITY</h3>	
<b>State</b> Minnesota	
<b>General Locality</b> Lake Superior	
<b>Locality</b> Two Harbors and Knife River	
<div style="border: 1px solid black; padding: 5px; text-align: center;">           1982 TO 19         </div>	
<h3 style="text-align: center;">REGISTRY IN ARCHIVES</h3>	
<b>DATE</b>	

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.		TYPE OF SURVEY		SURVEY TP. 00082	
DESCRIPTIVE REPORT - DATA RECORD				<input checked="" type="checkbox"/> ORIGINAL		MAP EDITION NO. 1	
				<input type="checkbox"/> RESURVEY		MAP CLASS III	
				<input type="checkbox"/> REVISED		JOB <del>XXX</del> CM-8316	
PHOTOGRAMMETRIC OFFICE				LAST PRECEDING MAP EDITION			
Rockville, Maryland				TYPE OF SURVEY		JOB PH-	
OFFICER-IN-CHARGE				<input type="checkbox"/> ORIGINAL		MAP CLASS	
Ronald K. Brewer				<input type="checkbox"/> RESURVEY		SURVEY DATES:	
				<input type="checkbox"/> REVISED		19__ TO 19__	
I. INSTRUCTIONS DATED							
1. OFFICE				2. FIELD			
Office - March 1, 1984				Field - August 12, 1984			
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				4. GRID(S)			
Lambert Conformal Conic				STATE Minnesota		ZONE North	
5. SCALES 1:5,000 and 1:10,000				STATE		ZONE	
III. HISTORY OF OFFICE OPERATIONS							
OPERATIONS				NAME		DATE	
1. AEROTRIANGULATION BY				N/A			
METHOD: LANDMARKS AND AIDS BY				N/A			
2. CONTROL AND BRIDGE POINTS PLOTTED BY				R. Cauthorne		Feb., 1984	
METHOD: Calcomp 748 Plotter CHECKED BY				N/A			
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY				C. Heazel		March, 1984	
COMPILATION CHECKED BY				J. Schad		March, 1984	
INSTRUMENT: NOSAP				CONTOURS BY		N/A	
SCALE: 1:5,000 and 1:10,000				CHECKED BY		N/A	
4. MANUSCRIPT DELINEATION PLANIMETRY BY				C. Heazel		March, 1984	
CHECKED BY				J. Schad		March, 1984	
METHOD: Smooth Drafting				CONTOURS BY		N/A	
HYDRO SUPPORT DATA BY				N/A			
SCALE: 1:5,000 and 1:10,000				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		March, 1984	
8. FINAL REVIEW BY				R. Rodkey		April, 1984	
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY				R. Rodkey		April, 1984	
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY				C. Lewis		May, 1984	
11. MAP REGISTERED - COASTAL SURVEY SECTION BY				E. DAUGHERTY		Nov. 1984	

## COMPILATION SOURCES

TP-00082

## 1. COMPILATION PHOTOGRAPHY

CAMERA(S) RC-10(Z) cfl = 153.14		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 checked="" type="checkbox"/> STANDARD
				MERIDIAN 90th	<input type="checkbox"/> DAYLIGHT
NUMBER AND TYPE	DATE	TIME	SCALE	<del>STAGE OF TIDE</del>	
82Z(C)2942-3	May 30, '82	8:53	1:30,000	<u>Water Level</u>	
82Z(C)2958-9	May 30, '82	9:16	1:15,000	Sta.: Two Harbors, Minn. - 600.66 Ft.	

## REMARKS

Lake Level data was furnished by the Tides and Water Levels Branch, Rockville, Maryland.

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

The source of the shoreline is the photographs listed above in Item 1.  
The shoreline was compiled based on interpretation of photographs and represents the interface between the water surface and land features at the time of photography.

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

None

## 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
None	None	None	None

## REMARKS

## HISTORY OF FIELD OPERATIONS

TP-00082

I. ☒ FIELD INSPECTION OPERATION☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	James E. Dunford	August, '83
2. HORIZONTAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	" " "
3. VERTICAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	N/A N/A N/A
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY LOCATED (Field Methods) BY IDENTIFIED BY	James E. Dunford " "
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	CLARIFICATION OF DETAILS BY	N/A
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	N/A

## II. SOURCE DATA

## 1. HORIZONTAL CONTROL IDENTIFIED

Photo-identified

## 2. VERTICAL CONTROL IDENTIFIED

None

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
82Z(C)2943	Two Harbors Radio Mast 1977		
82Z(C)2943	Two Harbors Power and Light Co. Stack 1952		
82Z(C)2943	Two Harbors Lighthouse 1952		
82Z(C)2958	KR-100 COE (Photo points)		
82Z(C)2943	AGATE BAY (Photo points)		
82Z(C)2943	TH-100 (Photo points)		

## 3. PHOTO NUMBERS (Clarification of details)

N/A

## 4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME
82Z(C)2943	Two Harbors Radio Mast 1977		
82Z(C)2943	Two Harbors Power and Light Co. Stack 1952		
82Z(C)2943	Two Harbors Lighthouse 1952		

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

## 7. SUPPLEMENTAL MAPS AND PLANS

N/A

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

13 CSI forms with 3.5 X 5 ground photographs, NOAA forms, sketches and aerial photographs listed above are contained in a field data folder.

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

## RECORD OF SURVEY USE

TP-00082

## I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Final Reviewed Class III Map		Chart Maintenance Print (Final)	MAY 22 1984	MAY 22 1984

## II. LANDMARKS AND AIDS TO NAVIGATION

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

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
2 pages		MAY 22 1984	NOAA Forms 76-40 Nonfloating Aids to Navigation and Landmarks

2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: MAY 22 1984
3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: \_\_\_\_\_

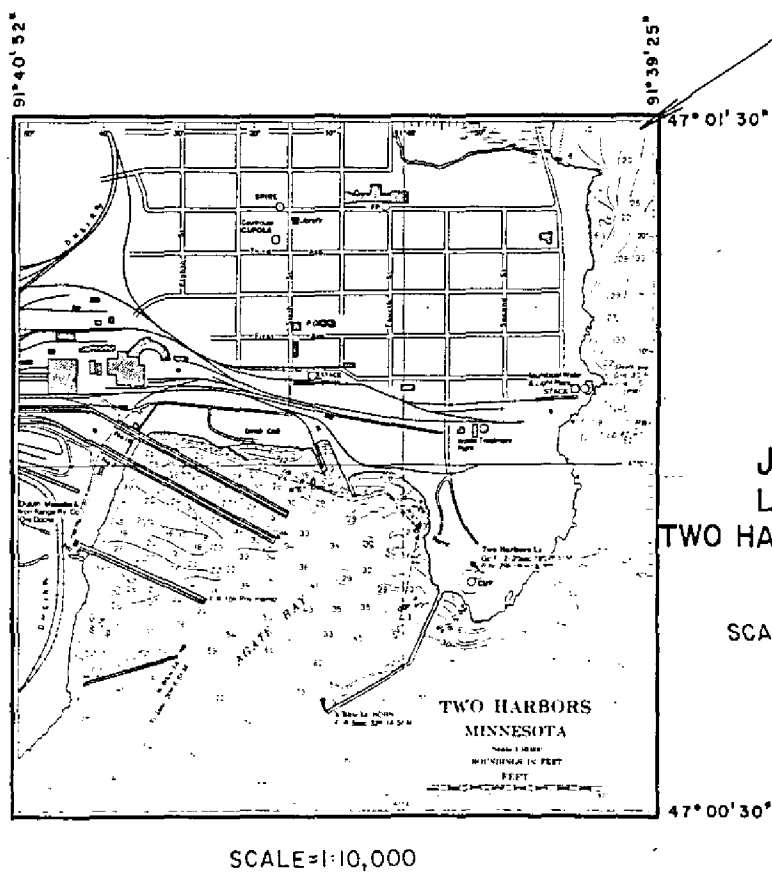
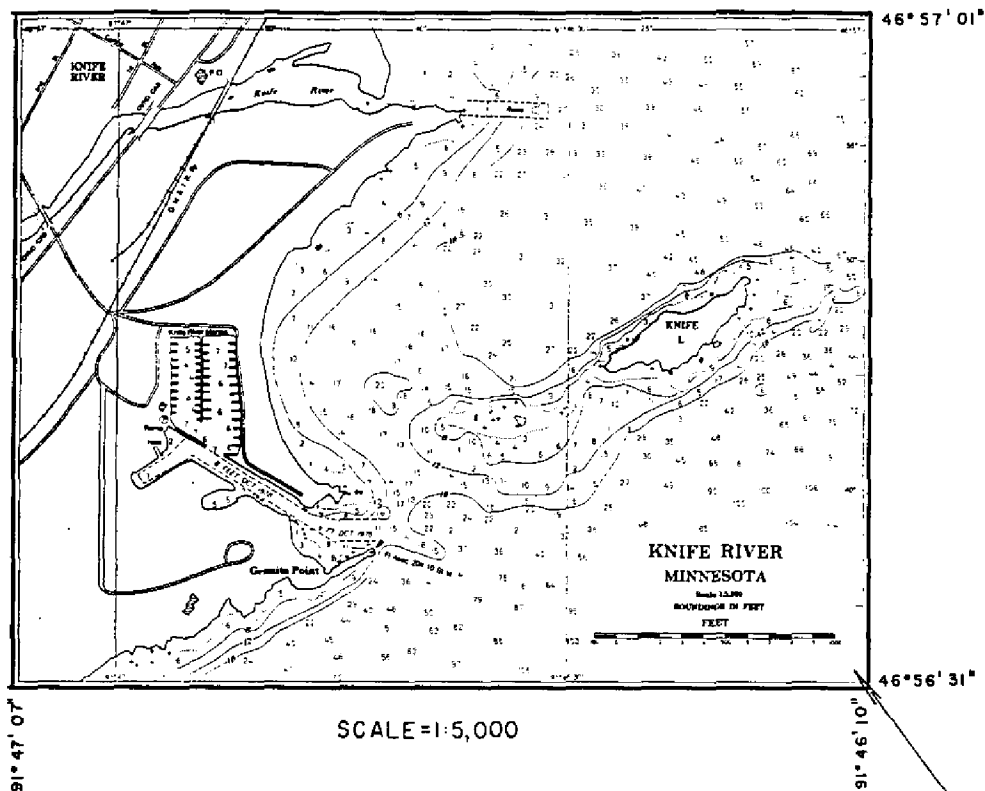
## III. FEDERAL RECORDS CENTER DATA

- DUPLICATE of Map Features of Possible Landmark Value Listing (2 pages)
- DUPLICATE NOAA FORM 76-40 (2 pages), DUPLICATE NOAA FORM 76-41 (1 page)
1. ☐ BRIDGING PHOTOGRAPHS; ☐ DUPLICATE BRIDGING REPORT; ☐ COMPUTER READOUTS.
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 567 SUBMITTED BY FIELD PARTIES.
3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.  
ACCOUNT FOR EXCEPTIONS:

4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: \_\_\_\_\_

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

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



JOB CM-8316  
LAKE SUPERIOR  
TWO HARBORS & KNIFE RIVER  
MINNESOTA  
CHART INSETS  
SCALE=1:5,000 & 1:10,000

## SUMMARY TO ACCOMPANY DESCRIPTIVE REPORT

TP-00082

This shoreline map consists of two insets covering the shoreline area of Knife River and Two Harbors, which are located on the western shore of Lake Superior, Minnesota.

The purpose of this survey is to provide contemporary shoreline data for the maintenance of nautical charts and to supplement future hydrographic surveys.

Field operations consisted of aerial photography and the recovery, establishment and photoidentification of geodetic control necessary for compilation. Triangulated control was established using Third-Order, Class I methods. There was no field inspection of the shoreline performed.

High and low altitude natural color photography was taken with the Wild RC-10(Z) camera on May 30, 1982. The compilation photography for 1:10,000 mapping(Two Harbors inset) was obtained at 1:30,000 scale and for 1:5,000 scale mapping(Knife River inset) at 1:15,000 scale. Supplemental color photography of the Two Harbors area was secured at 1:15,000 scale to complement the interpretation of detail.

Compilation was performed by the Coastal Mapping Unit, Rockville, Maryland. Delineation is based on office interpretation of the aerial photographs and was accomplished through photogrammetric compilation techniques utilizing the National Ocean Service Analytical Plotter(NOSAP). All line work is smooth drafted.

Final review was performed by the Coastal Mapping Unit, Rockville, Maryland. The map was registered as Class III (Final). This map complies with the project instructions and meets the requirements for National Standards of Map Accuracy.

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

## FIELD REPORT

CM-8316

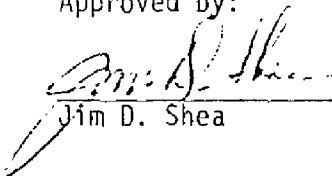
## Two Harbors and Knife River, MN

Project was completed in accordance with N/CG2 instructions dated August 12, 1983. Three (3) new 3rd order, Class I traverse stations were established (STONY POINT, KR 100 C.O.E., and TH 100 C.O.E.). These stations were established in a traverse run from NGS station BUCHANAN 1952 to TWO HARBORS LIGHTHOUSE. Data for this traverse will be entered into the NGS data bank. Traverse station AGATE BAY was established by AMC Operations Division in 1982 using the MAGNAVOX MX1502 SATELLITE SURVEYOR. This station was included in our traverse and used as one station to spur in photo points. Our field position missed the 1982 position by 2.421 meters. A position check of 1.006 meters was obtained at TWO HARBORS LIGHTHOUSE. In order to keep the data consistent, all photo point positions are based on unadjusted field positions determined in our traverse. The published NGS position for BUCHANAN 1952 was used as the starting station for the control data.

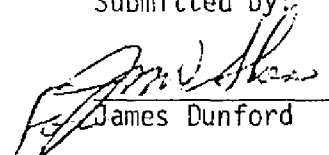
Eight (8) photo points (1A through 8A) were pricked on photo ZC-2958 at Knife River. Positions for the photo points were determined by traversing from station KR-100 C.O.E. Nine (9) photo points (1 through 9) were pricked on photo ZC-2943 at Two Harbors. Photo points 2,3,4,7,8, and 9 were determined by traverse from station AGATE BAY. Photo Points 1,5,6, were determined by traverse from station TH-100 C.O.E.

All data and records were sent to N/CG2313.

Approved by:

  
Jim D. Shea

Submitted by:

  
James Dunford



TP-00082

## DESCRIPTIVE REPORT CONTROL RECORD

MAP NO. TP-00082	JOB NO. CM-8316	STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRI- ANGULATION POINT NUMBER	GEODEIC DATUM 1927 North American		GEOGRAPHIC POSITION		REMARKS
					COORDINATES IN FEET STATE Minnesota ZONE North	$\phi$ LATITUDE $\lambda$ LONGITUDE			
KR-100 (1983) (Field Position)	Project field book				X=	$\phi$ 46-56-36.231			New NGS station established in 1983 plotted on map
					Y=	$\lambda$ 91-46-46.041			
Two Harbors Power and Light Co. Stack (1952)	Quad 470913 Sta # 1033				X=	$\phi$ 47-01-06.710			Charted Landmark Plotted on map
					Y=	$\lambda$ 91-39-35.787			
Two Harbors Lighthouse (1952)	Quad 470913 Sta # 1032				X=	$\phi$ 47-00-50.488			Charted Light Plotted on map
					Y=	$\lambda$ 91-39-49.274			
Two Harbors Radio Mast (1977)	Project field book				X=	$\phi$ 47-00-45.259			Outside map limits intersected in 1983
					Y=	$\lambda$ 91-41-13.274			
Agate Bay (1982) (Field Position)	Project field book				X=	$\phi$ 47-00-48.400			
					Y=	$\lambda$ 91-39-54.916			
					X=	$\phi$			
					Y=	$\lambda$			
					X=	$\phi$			
					Y=	$\lambda$			
					X=	$\phi$			
					Y=	$\lambda$			
					X=	$\phi$			
					Y=	$\lambda$			
					X=	$\phi$			
					Y=	$\lambda$			
COMPUTED BY									DATE
LISTED BY									DATE 3/28/84
HAND PLOTTING BY									DATE

COMPILATION REPORT  
TP-00082  
MARCH 1984

31. Delineation

Compilation of this map was accomplished through photogrammetric techniques utilizing the natural color compilation photographs and the National Ocean Service Analytical Plotter(NOSAP). The scale of the photographs used for the Two Harbors inset is 1:30,000. The scale of the photographs used for the Knife River inset is 1:15,000.

32. Control

Horizontal control for the compilation of the Two Harbors and Knife River insets are thirteen photoidentified control points established by a NOAA field survey unit. Refer to the Field Report bound with this Descriptive Report for information regarding the establishment of the photo points.

Vertical control was identified from USGS quadrangles.

33. Supplemental Data

None

34. Contours and Drainage

The compilation of contours is not a requirement for this map.

No drainage was delineated on the Two Harbors inset. Drainage delineated on the Knife River inset was compiled through photogrammetric compilation techniques utilizing the natural color compilation photographs.

35. Shoreline and Alongshore Details

There was no preliminary field inspection prior to compilation.

The shoreline and alongshore details were compiled from office interpretation of the mapping photographs as indicated in item #31.

36. Offshore Details

No unusual problems were encountered in compiling the offshore details depicted on this map.

37. Landmarks and Aids

One fixed aid to navigation was identified and measured during compilation of the Knife River inset.

Three fixed aids to navigation and three charted landmarks were identified and measured during the compilation of the Two Harbors inset. One charted landmark was identified and measured, but is outside the limits of the inset. It was also reported on the NOAA Form 76-40 for application.

38. Control for Future Surveys

None

39. Junctions

None

40. Horizontal and Vertical Accuracy

This map meets the requirements of the National Standards for Map Accuracy.

41. Map Features of Possible Landmark Value

During the compilation of the Knife River inset, three map features of possible landmark value were identified and measured. During the compilation of the Two Harbors inset, nine map features of possible landmark value were identified and measured. One additional map feature of possible landmark value which is outside the limits of the Two Harbors inset was identified and measured. For the identification and geographic positions of these features, refer to the Map Features of Possible Landmark Value listings bound with this Descriptive Report.

42 - 45. Not applicable

46. Comparison with Existing Maps

Comparison was made with the following USGS quadrangles:

Knife River, Minnesota; 1:24,000, 1953, photorevised 1969, photo-inspected 1975.

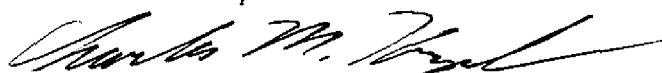
Two Harbors, Minnesota; 1:24,000, 1957, photorevised 1969.

47. Comparison with Existing Charts

Comparison was made with the following:

Chart 14966, 19th Edition, January 15, 1983, scale 1:120,000 and  
Insets of Two Harbors(1:10,000) and Knife River(1:5,000).

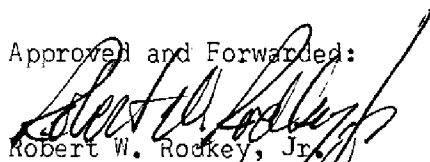
Submitted by:



Charles M. Heazel

Cartographer

Approved and Forwarded:



Robert W. Rodkey, Jr.

Chief, Coastal Mapping Unit

## REVIEW REPORT

TP-00082

61. General Statement

Refer to the Summary bound with this Descriptive Report for general information regarding the completion of this map.

62. Comparison with Registered Topographic Surveys - None63. Comparison with Maps of Other Agencies

Refer to the Compilation Report, item 46, for information on this subject.

64. Comparison with Contemporary Hydrographic Surveys - None65. Comparison with Nautical Charts

Refer to the Compilation Report, item 47, for information on this subject.

66. Adequacy of Results and Future Surveys

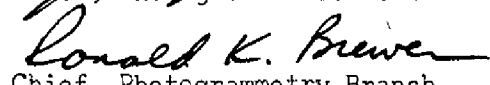
This map complies with the project instructions and the requirements for the National Standards of Map Accuracy.

Submitted by,

  
Robert W. Rodkey, Jr.

Final Reviewer

Approved and Forwarded:

  
act. Chief, Photogrammetric Section  
Chief, Photogrammetry Branch

March 27, 1984

GEOGRAPHIC NAMES

FINAL NAME SHEET

CM-8316 (Two Harbors and Knife River, Minnesota)

TP-00082

Agate Bay

Burlington Bay

Duluth Messabe and Iron Range (RY)

Granite Point

Knife Island

Knife River

Knife River (locality)

Knife River Marina (cultural)

Lake Superior

Two Harbors

Approved:

*Charles E. Harrington*

Charles E. Harrington

Chief Geographer

Nautical Charting Division



RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	<input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW	OFFICE ACTIVITY REPRESENTATIVE
ACTIVITIES	<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64.)	
<b>OFFICE</b> <b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	<b>FIELD (Cont'd)</b> <b>B. Photogrammetric field positions** require</b> entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
<b>FIELD</b> <b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	<b>II. TRIANGULATION STATION RECOVERED</b> When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75 <b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 <b>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent</b> entirely, or in part, upon control established by photogrammetric methods.
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	





RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	<input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	OFFICE ACTIVITY REPRESENTATIVE  <input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64.)	
<b>OFFICE</b> <b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	<b>FIELD (Cont'd)</b> <b>B. Photogrammetric field positions** require</b> entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
<b>FIELD</b> <b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-1 8-12-75	<b>II. TRIANGULATION STATION RECOVERED</b> When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75  <b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75  <b>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</b>
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	

10/83

## MAP FEATURES OF POSSIBLE LANDMARK VALUE

MAP NO.	JOB NO.	GEOGRAPHIC AREA	GEODETIC DATUM	ORIGINATING ACTIVITY
TP-00082	CM-8316	Knife River and Two Harbors, Lake Superior, Minnesota	1927 NA	Coastal Mapping Unit, Photogram. Branch, Rockville, Maryland
CHARTING NAME	DESCRIPTION	PHOTO NO.	PLANE COOR. (FT)	GEOGRAPHIC POSITION
	Knife River	----- Date of Photo	STATE <u>Minnesota</u> ZONE <u>North</u>	φ <u>  </u> λ <u>  </u>
		-----	X	φ
		-----	Y	λ
Light Pole	Light Pole at Knife River Marina	82Z(C)2958 5/30/82	X 2,329,095.4 Y 165,562.9	φ 46-56-46.40 λ 91-46-56.82
Light Pole	Light Pole at Knife River Marina	82Z(C)2958 5/30/82	X 2,329,095.8 Y 165,355.9	φ 46-56-44.36 λ 91-46-56.87
Light Pole	Light Pole at Knife River Marina	82Z(C)2958 5/30/82	X 2,328,980.4 Y 165,212.9	φ 46-56-42.96 λ 91-46-58.57
	Two Harbors	-----	X	φ
		-----	Y	λ
Light Pole	Light Pole in industrial complex	82Z(C)2942 5/30/82	X 2,354,543.6 Y 191,492.7	φ 47-00-57.86 λ 91-40-44.55
Tank	Tank in industrial complex	82Z(C)2942 5/30/82	X 2,354,732.4 Y 192,047.0	φ 47-01-03.28 λ 91-40-40.38
Vent	Tall vent on building	82Z(C)2942 5/30/82	X 2,354,472.8 Y 192,406.7	φ 47-01-06.87 λ 91-40-44.03
Tank	Easterly of Two	82Z(C)2942 5/30/82	X 2,354,555.5 Y 193,129.0	φ 47-01-13.99 λ 91-40-42.65
Tank	Westerly of Two	82Z(C)2942 5/30/82	X 2,354,515.7 Y 193,130.9	φ 47-01-14.01 λ 91-40-43.22
Tank	in industrial complex	82Z(C)2942 5/30/82	X 2,355,483.0 Y 192,587.9	φ 47-01-08.48 λ 91-40-29.41
Tank	Large tank at Waste Treatment Plant	82Z(C)2942 5/30/82	X 2,358,304.4 Y 192,115.1	φ 47-01-03.30 λ 91-39-48.82

NOTE: The objects have not been inspected from seaward to determine their value as landmarks.

LISTED BY	DATE	LISTING CHECKED BY	DATE
Charles Heazel	3/28/84	James Schad	3/29/84

10/83

## MAP FEATURES OF POSSIBLE LANDMARK VALUE

MAP NO.	JOB NO.	GEOGRAPHIC AREA	GEODETIC DATUM	ORIGINATING ACTIVITY	
TP-00082	CM-8316	Knife River and Two Harbors, Lake Superior, Minnesota	1927 NA	Coastal Mapping Unit, Photogram. Branch, Rockville, Maryland	
CHARTING NAME	DESCRIPTION	PHOTO NO.  Date of Photo	PLANE COOR. (FT) STATE ZONE	GEOGRAPHIC POSITION φ λ	POSITION QUALITY
Stack	Easterly of Two; at power plant	82Z(C)2942 5/30/82	X 2,359,270.0 Y 192,461.5	φ 47-01-06.54 λ 91-39-34.80	Aero- triangulated
Tower	possible radio tower	82Z(C)2942 5/30/82	X 2,358,266.2 Y 190,758.5	φ 47-00-49.92 λ 91-39-49.74	Aero- triangulated
			X Y	φ λ	
	The following map feature has been identified as having possible landmark value for application to NOS Nautical Chart 14966. It is outside the limits of the Two Harbors Inset.		X	φ	
Water Tank	Water Tank NW of Two Harbors	82Z(C)2942 5/30/82	X 2,351,491.4 Y 200,301.5	φ 47-02-25.32 λ 91-41-24.97	Aero- triangulated
			X Y	φ λ	
			X Y	φ λ	
			X Y	φ λ	
			X Y	φ λ	
			X Y	φ λ	
			X Y	φ λ	
			X Y	φ λ	
			X Y	φ λ	

NOTE: The objects have not been inspected from seaward to determine their value as landmarks.

LISTED BY Charles Heazel	DATE 3/28/84	LISTING CHECKED BY James Schad	DATE 3/29/84
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