10300

Diagram No. LS-62

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. AHP-10-3-89

Registery No. H-10300

LOCALITY

State Michigan--Ontario

General Locality St. Mary's River

Sublocality Gogomain River to Sawmill Point

1989

CHIEF OF PARTY
LT V.D. Ross

LIBRARY & ARCHIVES

DATE July 22, 1991

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

10300

REF: L-992(91)

WCL

CHTS
14882
14883
14360

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-10300

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

AHP-10-3-89

State MICHIGAN--ONTARIO

General locality ST. MARY'S RIVER

Locality GOGOMAIN RIVER TO SAWMILL POINT

Scale 1:10000 Date of survey 05/09/89 TO 08/~~25~~11/89

Instructions dated APRIL 7, 1989 Project No. OPR-X278

Vessel ATLANTIC HYDROGRAPHIC PARTY-2, LAUNCHES 1292, 0520, 0517

Chief of party LT VINCENT DALE ROSS

Surveyed by LTJG CATHERINE JANE BRADLEY

Soundings taken by echo sounder, hand lead, pole RAYTHEON DE-719-C/WITH ODOM DIGITRACE

Graphic record scaled by MJM, MMO, ~~BAL~~ MCMANN, MANUAL ORTIZ, BLAKE, GDH, CJB, HENDRIX, VPL, BRADLEY, BCW, LANDIS, GHL, WEBER, JLB LEONARD BUDLONG

Graphic record checked by MJM, MMO, BAL, GDH, CJB, VPL, BCW, GHL, JLB

Protracted by HDAPS Automated plot by ~~AMC (SMOOTH SHEET)~~ XYNETICS 1201 (AHS) BRUNING ZETA 824 PLOTTER (AHP)

Verification by ATLANTIC HYDROGRAPHIC SECTION PERSONNEL

Soundings in ~~fathoms~~ feet at MKW MLLW IGLD

REMARKS: TIME MERIDIAN USED WAS UTC

LEAST DEPTHS WERE MEASURED WITH LEAD LINE

THE SHEET LETTER IS DESIGNATED AS "H"

NOTES IN THE DESCRIPTIVE REPORT WERE MADE IN RED DURING OFFICE PROCESSING.

SC 1-30-97 AWOIS + SURF 9/5/91 RWD

KWW 8-15-91

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U.S. GPO: 1974-0-768-081/1207

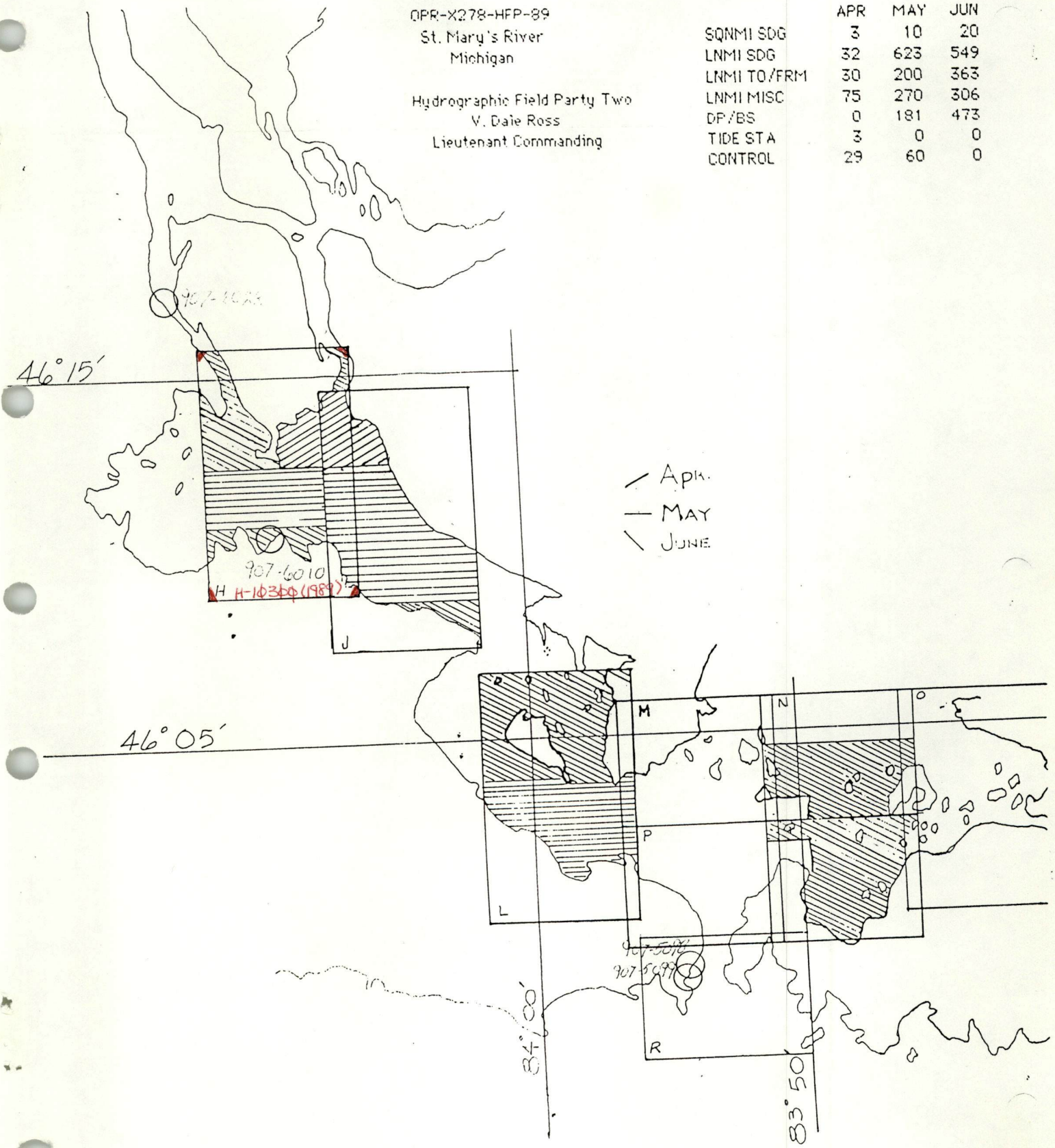
Progress Sketch

OPR-X278-HFP-89
St. Mary's River
Michigan

Hydrographic Field Party Two
V. Dale Ross
Lieutenant Commanding

LEGEND

	APR	MAY	JUN
SQNMI SDG	3	10	20
LNMI SDG	32	623	549
LNMI TO/FRM	30	200	363
LNMI MISC	75	270	306
DP/BS	0	181	473
TIDE STA	3	0	0
CONTROL	29	60	0



DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10300
Field No. AHP-10-3-89

Scale: 1:10,000
Chief of Party: Lt. Vincent Dale Ross
Atlantic Hydrographic Party Two

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-X278-HFP, St. Mary's River, Michigan, dated April 7, 1989, and Change Number 1, dated August 2, 1989.

The sheet letter is "H" as specified by the project instructions.

The purpose of this project is to provide contemporary hydrography for the maintenance of existing charts and the construction of new large-scale charts. Also, to fulfill requests by the Lake Carriers Association, Great Lakes Pilots, Canadian Hydrographic Service, U.S. Coast Guard, U.S. Steel Great Lakes Fleet, commercial fisherman, and local marinas.

B. AREA SURVEYED

The area surveyed was the St. Mary's River, from the Gogomain River to Sawmill Point. The survey limits are as follows:

North - 46°14'10"N on the ~~West~~EAST
North - 46°15'05"N on the ~~East~~WEST
South - 46°09'26"N
East - 84°06'00"W
West - 84°11'45"W

The bottom is composed of mostly rock and mud. Much of the shoaler areas are covered with grass.

Depths in this survey range from zero to sixty-~~one~~ feet.

This survey was conducted from May 9 (day 129) to August 11 (day 223) 1989.

C. SOUNDING VESSELS

Vessels 0517, 0520 and 1292, all 21-foot MonArks, were used to collect all survey data. There were no unusual vessel configurations nor problems encountered.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The following Raytheon Fathometers (model DE-719C), with Odom Digitraces, were used during the survey:

LAUNCH	S/N	DAYS
0517	V-5 10348	129 - 213
0520	7881	135 - ~~146~~ 223
1292	3947	132 - ~~237~~ 158

When using the Raytheon, Model DE-719C, Fathometers calibration checks were made frequently on each day of hydrography. Any necessary adjustments were made and noted on the fathogram. Any departures from the initial zero was corrected during the scanning process.

Leadlines were used to obtain least depths on dive investigations.

Survey records were scanned by AHP 2 employees. Significant peaks and deeps which occurred between selected soundings, missed depths, incorrectly digitized soundings, and the effects of sea and swell action were corrected while scanning.

The Raytheon DE-719C Fathometers were calibrated for a speed of sound through water of ~~4800~~ 1500 meters/second. Corrections for the speed of sound through water were computed from data obtained with Odom Hydrographic Systems, Inc. DIGIBAR electronic speed of sound probes (SN 154 and 155). Program "Velocity" was used for the speed of sound correction computations.

All speed of sound correctors were applied to the rough plot and the final field plot.

Cast	Day	Depth
1	130	12 meters
2	154	12 meters
3	201	10 meters

Weather permitting, leadline comparisons were conducted on each day of hydrography to determine an instrument corrector. The average instrument corrector on all three survey vessels was less than 0.1 ft. No instrument error was applied. Leadline comparison forms can be found in the separates of this report. DATA REMOVED FROM ORIGINAL DESCRIPTIVE REPORT AND FILED WITH FIELD RECORDS.

The final field sheets and the rough sheets were plotted using unverified actual water levels determined from the Rocky Point water level station (No 907-6010) located at 46°10.7'N, 84° 07.4'W. Smooth water levels were requested from the Sea and Lake Levels Branch, N/OMA12, in a letter dated August 25, 1989. APPROVED WATER LEVELS WERE APPLIED DURING OFFICE PROCESSING.

Settlement and squat correctors were determined on day 122 for launch 0520, day 124 for launch 0517, and day 128 for launch 1292. All tests were run using the level method. Copies of the field data and graphs of the settlement and squat correctors vs. RPM are included in the separates. These correctors and the draft corrector of 1.2 ft. were applied on-line through the offset table.

E. HYDROGRAPHIC SHEETS (FIELD SHEETS)

All field sheets were produced by AHP 2 with the HDAPS system on the Bruning ZETA 824 plotter, at a scale of 1:10,000. The following sheets have been submitted:

Sheet	Quantity
Boat Sheet East	1
Boat Sheet West	1
Trackline Plot East	1
Trackline Plot West	2
Rough Sheet East	1
Rough Sheet West	1
Rough Sheet Overlay East	1
Rough Sheet Overlay West	1
Final Field Sheet East	1
Final Field Sheet West	1
Final Field Sheet Overlay East	1
Final Field Sheet Overlay West	1

Boat sheets, trackline plots and rough sheets were used to monitor and evaluate the survey data. The final field sheets contain main scheme hydrography, splits, signals and shoreline. The final field sheet overlays show detached positions, crosslines, developments, and bottom samples.

All survey sheets have been submitted with the descriptive report to the Atlantic Hydrographic Section, Atlantic Marine Center, Norfolk, Virginia.

F. CONTROL STATIONS SEE ALSO SECTION 2.a. OF THE EVALUATION REPORT.

Nine monumented control stations (signals 127, 130, 131, 132, 134, 140, 142, 147, and 176), and six aids to navigation (signals 121, 123, 126, 128, 129, and 135) were used to control this survey. All stations used to control this survey were established as Third-order, Class I stations by N/MOA2222, and Hydrographic Field Party 2 in 1988. All stations were located on the North American Datum, 1927, and are listed in the separates following this report.*

G. HYDROGRAPHIC POSITION CONTROL

The methods used to control this survey were; range azimuth using a Krupp Atlas Polarfix, model SW 1172 A001 (S/N 00090), range azimuth using a Hewlet Packard 3810 EDM (S/N 59976), and multiple lines of position using Motorola Falcon 484 Mini-Rangers. The following Falcon Mini-Ranger equipment was used:

VESNO	EQUIPMENT	S/N
0517	RPU	F0241
	RT	E2967
0520	RPU	E0146
	RT	F3389
1292	RPU	E0149
	RT	E2917
	R/S	E2909
	R/S	F3244
	R/S	E2889
	R/S	E2907
	R/S	E2913
	R/S	E2912
	R/S	F3237
	R/S	C2091
	R/S	C2058

Baseline calibrations of the Motorola Falcon 484 equipment were performed on May 1 and May 5, 1989. The correctors were applied on-line through the Comflex "C-O" tables. Baseline calibration forms and the "C-O" tables are included in the separates.*

*DATA REMOVED FROM THE ORIGINAL DESCRIPTIVE REPORT AND FILED WITH FIELD RECORDS.

DN	VESNO	REMOTE
123	0520	F3237
		E2913
		C2058
		C2091
		E2912
135	0520	E2909
		E2889
		E2907
142	0517	E2907
		E2889
		F3244
132	1292	E2912
		E2909
		E2907
		F3237
		E2913
		C2091

All critical system check values were less than 5 meters which is within the required limits. Results of the calibration are included in the separates. DATA REMOVED FROM ORIGINAL DESCRIPTIVE REPORT AND FILED WITH FIELD DATA.

Non-critical system checks were performed by visually observing the error circle radius (ecr) and residual values on the Comflex screen in the survey vessels. When the error circle radius was greater than 15m (1.5m at the survey scale) or the residuals were greater than 5m (.5m at the survey scale) for more than three to five minutes, survey operations were suspended in that area until the problem was solved. If a vessel inadvertently ran with high residuals or error circle radii the data were rejected and later rerun. Any positions which had a high error circle radius or residuals in an otherwise good line were smoothed during processing. If any five consecutive soundings had high error circle radii or residuals the data were rejected.

The Polarfix was used within the following acceptable tolerances for the check initial angles.

Average of: Maximum planned survey range plus distance of sensing head to active target	Tolerance
Less than 1000 meters	± 6.8'
1000-1999 meters	± 3.4'
2000-2999 meters	± 2.3'
3000 meters or greater	± 2.0'

H. SHORELINE SEE SECTION 2.b. OF THE EVALUATION REPORT.

Shoreline detail shown on the final field sheet was manually transferred by hand from TP-00353, TP-00356 AND TP-00357. The shoreline manuscript was compiled at 1:20,000 scale and photographically enlarged to 1:10,000 scale.

Shoreline verification was accomplished by comparison of the main scheme hydrography which junctions at shore, or by visual inspections. The southern shore; around Rocky Point, Birch Point, and Roach Point have foul limits defined by detached positions of rocks. Other areas were labeled as grassy, as described on the echograms.

Changes in the shoreline are shown in red ink on the final field sheet. Verified shoreline is shown in black ink on the final field sheet.

Most shoreline details were verified by detached positions. However, features on the T-map that were easily identifiable in the field were assigned reference numbers. The reference numbers are labeled on the final field sheet and on the "Notes to Hydrographer" print.

The detached positions south of Saw Mill Point and North of Kemps Point were taken several times, positions 765 - 783 on day 150 were not plotted because the Polarfix program did not acknowledge all of the detached positions taken. Positions 1431 - 1432 and 1437 - 1438 from day 213 were not plotted on the final field sheet because the positions appeared to be about 20 meters off of the positions on the T-map. Finally positions 1450 - 1472 were taken using a Hewlet Packard 3810 EDM to determine the range and azimuth, and plotted by hand. All ranges and azimuths obtained with the H.P. 3810 EDM are written on the fathograms. SEE ALSO SECTION 1.a. OF THE EVALUATION REPORT.

Many of the detached positions around Rocky Point (positions 4214-4233) were inadvertently taken with only two lines of positions. The angle of intersections exceeded the 150 degree limit. Many of these detached positions were of features appearing on the T-map. By comparing the detached positions with the features on the shoreline manuscript it is apparent that the detached positions plot in the correct location. Therefore, the positions were neither rejected nor rerun.

I. CROSSLINES SEE SECTION 3.a. OF THE EVALUATION REPORT.

A total of 30.7 linear nautical miles of crosslines were run on H-10300 which equals 8% of the linear nautical miles of hydrography. Crossline soundings agree to within 1-foot of the main scheme soundings.

Main scheme hydrography and crosslines were run with three sounding vessels. Overlapping soundings, between the three vessels, agree within one foot.

J. JUNCTIONS SEE SECTION 5. OF THE EVALUATION REPORT.

This sheet junctions with H-10278 (1988) to the northwest and with H-10299 (1989) to the east. The southern limit was enclosed by shoreline and the northern limit, latitude 46°14'05", was defined by the sheet layout issued with the project instructions, dated April 7, 1989.

Junction soundings between the present survey and both H-10278 (1988) and H-10299 (1989) agree well. Depths varied by no more than 2 feet.

K. COMPARISON WITH PRIOR SURVEYS SEE SECTION 6. OF THE EVALUATION REPORT.

This survey was compared with the following prior surveys:

Registry #	Scale	Year Surveyed
LS-1698	1:10,000	1936
LS-1699	1:10,000	1936
~~LS-1700~~	~~1:10,000~~	~~1936~~
LS-2043	1:10,000	1953
LS-2044	1:10,000	1953
~~LS-2045~~	~~1:10,000~~	~~1953~~

A note on the prior surveys LS-1698 (1936), LS-1699 (1936), and LS-1700 (1936) states that the 1936 surveys were supplemented with soundings from a survey conducted in 1895. The 1953 surveys cover the same areas as the 1936 surveys. The 1953 soundings are reconnaissance lines which supplement the depths shown on the 1936 surveys.

A comparison between the present survey and the above prior surveys reveals only minor changes in the general bottom configuration. Most of the changes from both the 1936 surveys and the 1953 surveys can be attributed to the dredging of the channels. In 1936 the channels were generally three to four feet shallower than the current depths. Other areas of major changes were the dumping grounds. In these areas soundings differed by as much as ten feet. This change was a result of subsequent dumping and settling of debris. Soundings in areas unaffected by dredging compared well.

There are two AWOIS items within the limits of the present survey. AWOIS item number 2347 was described as a reported obstruction, at latitude 46°14'22.75"N, longitude 84°06'31.69"W,

with a fathometer least depth of 23.2 ft at LWD. A dive investigation found ruins of a large wooden pier at lattitude 46°14'22.84"N, longitude 84°06'31.44"W. The second AWOIS item investigated, AWOIS number 6311, was described as a submerged crib at latitude 46°14'35.30", longitude 84°10'48.70"W. The item was found, at lattitude 46°14'34.48"N, longitude 84°10'51.87"W, while conducting shoreline verification. Both items should be charted at the above found positions. The AWOIS reports are included with the separates following the text. SEE SECTION 7.9.1) AND 7.9.2) OF THE EVALUATION REPORT.

L. COMPARISON WITH THE CHART SEE SECTION 7. OF THE EVALUATION REPORT.

This survey was compared with the 36th edition of chart 14883 dated May 31, 1986.

All shoal areas within the limits of the survey were developed by running 50-meter splits of the main scheme and 50-meter lines perpendicular to the main scheme.

The discrepancies with the chart are as follows:

1. Four small charted islands in the vicinity of latitude 46°13'44"N, longitude 84°10'09"W no longer exist. ~~These islands should be deleted from the chart~~. SEE ALSO SECTION 6.b.2) OF THE EVALUATION REPORT

2. Five small charted islands in the vicinity of latitude 46°13'33" N, longitude 84°10'00"W no longer exist as islands. ~~These islands are now submerged and should be shown as shoals on the chart~~. SEE ALSO SECTION 6.b.2) OF THE EVALUATION REPORT.

3. The charted island in the vicinity of latitude 46°13'17"N, longitude 84°09'54"W no longer exists as an island. ~~The island is now submerged and should be charted as a shoal.~~ SEE ALSO SECTION 6.b.3) OF THE EVALUATION REPORT.

4. The charted island in the vicinity of latitude 46°12'45" N, longitude 84°09'40"W, no longer exists as an island. ~~The island is now submerged and should be charted as a shoal~~. SEE ALSO SECTION 6.b.3) OF THE EVALUATION REPORT.

5. ~~6~~ A rock awash charted at latitude 46°13'50"N, longitude 84°~~08'50~~"W was looked for on day 213, the weather was clear and the bottom was visible. The depth of the water in the area is two to five feet. The rock was not found.* ~~It is recommended that the rock be deleted from the chart~~. SEE ALSO SECTION 6.b.8) OF THE EVALUATION REPORT. *DO NOT CONCUR

6. The 2-foot shoal at latitude 46°12'05"N, longitude 84°08'35"W was searched for by running splits of the main scheme hydrography, and fifty meter spaced lines perpendicular to the main scheme. There was no indication of shoaling at the charted location. ~~The shoal should be deleted from the chart~~. SEE ALSO SECTION 7.9.17) OF THE EVALUATION REPORT. AWOIS #8103

7. Kemps Point Lighted Buoy 15Ais not charted. The

position of the buoy is latitude 46°13'53.661"N, longitude 84°10'31.445"W. (Light List No. 13012)

The charted hydrography originates from the previously discussed prior surveys noted in Section K of this report.

There are no conflicts between the charted channel controlling depths and present survey depths. SEE SECTION 7.b. OF THE EVALUATION REPORT.

There are no newly found, unreported dangers to navigation in the present survey area. SEE SECTION 7.c. OF THE EVALUATION REPORT.

There are no submarine cables, submarine pipelines, nor ferry routes in the survey area.

The Winter Point Range falls within the survey limits. The charted azimuth is 321°. A computed azimuth of the range is 322°05'32.101".

All charted spoil areas are active as stated in a letter from Harold J. Lawson, Area Engineer, of the Soo Area Army Corps of Engineers. A copy of the letter can be found in the ~~separates~~ DESCRIPTIVE REPORT following the text. SEE ALSO SECTION 7.9.5) OF THE EVALUATION REPORT.

The present survey is adequate to supersede the charted hydrography.

M. ADEQUACY OF SURVEY SEE SECTION 9. OF THE EVALUATION REPORT.

This survey is complete and adequate to warrant its use to supersede prior surveys for charting in the common area.

N. AIDS TO NAVIGATION SEE SECTION 7.d. OF THE EVALUATION REPORT.

All of the floating aids to navigation in this survey area were located by detached positions, and appear to serve their intended purpose. The LIGHT LIST, Volume VII, GREAT LAKES, 1989 Edition states that all of the lighted buoys are replaced with winter buoys.

The charted buoy G "9" Fl G 2.5 s, in the West Neebish Channel, is now a light; the light list reflects this. The buoy should be removed from the chart and a light charted at latitude 46°12'35.425"N, longitude 84°09'03.170"W. CONCUR

There are seven non-floating aids to navigation in the survey area. The positions may be referenced on the "Report on Landmarks for Charts and Nonfloating Aids to Navigation" 76-40, included with the Separates following the text.

The tower charted at latitude 46° 10' 03" N, longitude 84° 08' 14" W (station 141) does not exist. There is,however, a small tower (station 181), which appears on the T-map, located by hydrographic positioning means on day 143, at latitude 46°10'12.2", longitude 84°08'17.4". This tower is of little navigational use, and should not be plotted on the chart. CONCUR

Positions were determined for upbound channel buoys Gr "3" and N "4" using an H.P. 3810 on day 237. These detached positions were plotted by hand on the final field sheet.

O. STATISTICS

Description	VESNO 1292	VESNO 0520	VESNO 0517	TOTAL
Total Positions	1240	582	1472	3294
Detached Positions	53	0	114	167
Crossline miles	0	17.9	11.8	30.7
Development miles	24.1	0	27.5	51.6
Mainscheme miles	110.4	75.4	112.8	305.8
Total Miles of Hydrography	134.5	91.3	148.1	373.9
Bottom Samples	117	0	8	125
Digibar Casts (VESNO 1283)	x	x	x	3
Tide Stations Leveled	x	x	x	5
Days of Production	11	5	20	36

Bottom samples were taken and submitted to the Smithsonian Institution as directed in Section 6.7 of the project instructions. Bottom sample positions were plotted on the overlay with the crosslines, channel lines, and other detached positions. The bottom samples were listed on the Oceanographic Log Sheet - M, NOAA Form 75-44, and may be found in the Separates Following Text. DATA REMOVED FROM ORIGINAL DESCRIPTIVE REPORT AND FILED WITH FIELD RECORDS.

P. MISCELLANEOUS

No anomalous currents were observed in the survey area.

While plotting the final field sheet day number 158, position numbers 1136 through 1336 had no water level correctors applied. Therefore, the soundings plotted one foot deeper than the actual depths.

Position 3051+1 and position 34+3 were hand plotted as the depth edits could not be made easily on the 9-track tapes.

Q. RECOMMENDATIONS

Q. RECOMMENDATIONS

The Army Corps of Engineers is continually monitoring and maintaining the channel depths, therefore, the depths in the channels and active spoil areas are subject to change. CONCUR

R. AUTOMATED DATA PROCESSING

Data is collected on-line using a Comflex 1030 NX hard disk and raw data is transferred to the off-line processing system using a 3.5" floppy disk. Off-line processing is accomplished on the HDAPS system consisting of the following system components: a Hewlett Packard (HP) 9000 Model 300 computer, an HP 9153C Disk Drive with a Winchester hard disk storage capacity of 20 Mbytes, an HP 98785A Color Monitor, a Bruning ZETA 824 plotter, an HP 82906A printer, and an M4 Data Model 9800 tape drive.

Raw data on the floppy disks, and edited data stored on magnetic tapes have been submitted to the Atlantic Marine Center, Atlantic Hydrographic Section, AMC with the survey data.

In addition to the HDAPS system, the following non-HDAPS computer programs were used:

VELOCITY (Version 1.00 Ext.)	Velocity Computations (IBM PC)
MTEN3	Geodetic Computations (IBM PC)

S. REFERRAL TO REPORTS

Horizontal Control Report, OPR-X278, submitted in 1988
Coast Pilot Report, OPR-X278-HFP, submitted in 1989
User Evaluation Report, OPR-X278-HFP, submitted 1989
Chart Sales Agent Visit Report, OPR-X278-HFP, submitted 1989

Submitted by:

Catherine J. Bradley

Catherine J. Bradley, LTJG/NOAA

CHART #14883

PRE-SURVEY REVIEW ITEM #6311
Obstruction

SOURCE: Kirshner's 1944 revisory survey

INVEST. DATE: August 1, 1989 TIME:20:33:00 VESSEL #0517

Chief of Party: LT V. Dale Ross

REFERENCE: H-10300 (OPR-X278-HFP-89)

POSITION #: 1466

CORRECTORS APPLIED: None

VELOCITY:No TRA CORRECTORS:No

UNVERIFIED ACTUAL WATER LEVELS:No

GEODETIC POSITION:	LATITUDE	LONGITUDE
CHARTED:	46°14'35.30"N	84°10'48.70"W
OBSERVED:	46°14'34.~~48~~70"N	84°10'51.~~87~~73"W

POSITION DETERMINED BY: Range/Azimuth with a Hewlet Packard 3808 EDM

METHOD OF ITEM INVESTIGATION: The crib was found while conducting shoreline verification.

CHARTING RECOMMENDATIONS: ~~Chart the submerged at the observed position.~~ SEE SECTION 7.9.2) OF THE EVALUATION REPORT.

COMPILATION USE

CHART: APPLIED AS:

CHART #14883 PRESURVEY REVIEW ITEM #2347

SOURCE: CES 14883-OPR-Z451-HSB-81

INVEST. DATE: 06/07/89 TIME: 16:09:32 VESSEL: #0517

Chief of Party: LT V. Dale Ross

REFERENCE: H-10300 (OPR-X278-HFP-89)

POSITION: 1337

CORRECTORS APPLIED:

VELOCITY:No TRA CORRECTORS:Yes

UNVERIFIED ACTUAL WATER LEVELS:No

GEODETIC POSITION:	LATITUDE	LONGITUDE
CHARTED: 23 FT WK "BRUCE" (DISPROVED)	46°14'22.75"N	84°06'31.69"W
OBSERVED: pier ruin (subm) located	46°14'22.84"N	84°06'31.44"W

POSITION DETERMINED BY: Multiple Lines of Position (Falcon 484)

METHOD OF ITEM INVESTIGATION: Dive investigation. A circle search was performed in the area. Found was submerged ~~wreckage~~ ruins of a large wooden pier. Leadline least depth is ~~24.0~~ 22.0 feet.

CHARTING RECOMMENDATIONS: ~~Remain charted as an obstruction.~~
SEE SECTION 7.9.1) OF THE EVALUATION REPORT.

COMPILATION USE

CHART: APPLIED AS:

DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
SAULT STE. MARIE AREA OFFICE
SAULT STE. MARIE, MICHIGAN 49783 - 1880

IN REPLY REFER TO

May 24, 1989

Soo Area Office

Catherine Bradley
HFP2
P. O. Box 457
Detour, Michigan 49725

Dear Ms. Bradley:

Confirming your discussion with Mr. Ed Hallquist of this office on this date, consider the charted spoil areas in the St. Marys River as active spoil areas.

Sincerely,

Harold J. Lawson
Area Engineer

ST MARYS RIVER OPR-X278-HFP
LIST OF GEOGRAPHIC POSITIONS

SPN	STATION NAME	GPN CODE K	LATITUDE DEG	MN	SEC	LONGITUDE DEG	MN	SEC
101	PK RANGE	9	46	20	16.70205	84	12	18.00841
102	SHINGLE	5	46	21	48.77985	84	11	12.89350
103	WEST NEEBISH CHANNEL LT 45	5	46	20	44.25184	84	12	50.41980
104	MIDDLE NEEBISH LT 61	5	46	19	57.59312	84	11	3.03278
105	MYERS	5	46	19	2.35643	84	13	10.09143
106	CHAR	5	46	18	51.61357	84	12	38.41782
107	MOE	5	46	17	19.90232	84	13	12.48847
108	BARBEAU R MAST	5	46	17	3.30112	84	12	43.93538
109	RC 32	5	46	17	7.53952	84	12	40.31738
110	WEST NEEBISH CHANNEL LT 32	5	46	17	7.46301	84	12	40.42414
111	WEST NEEBISH CHANNEL LT 33	5	46	17	10.03777	84	12	50.20611
112	OAK RIDGE RANGE F LT	5	46	17	8.01664	84	12	56.70598
113	OAK RIDGE RANGE R LT	5	46	16	48.81680	84	12	57.45145
114	WEST NEEBISH CHANNEL LT 30	5	46	16	56.13089	84	12	28.62332
115	WEST NEEBISH CHANNEL LT 25	5	46	16	.04141	84	11	34.08251
116	ENG	5	46	15	51.85348	84	11	27.04230
117	WEST NEEBISH CHANNEL LT 27	5	46	16	27.05435	84	12	3.07567
118	WEST NEEBISH CHANNEL LT 29	5	46	16	54.26406	84	12	32.32246
119	WEST NEEBISH CHANNEL LT 28	5	46	16	29.01249	84	11	59.53858
120	WEST NEEBISH CHANNEL LT 26	5	46	16	1.91995	84	11	30.44431
121	ROCK CUT LOWER LEADING LT	5	46	15	6.19672	84	10	33.51235
122	LOW	5	46	15	6.14849	84	10	33.55244
123	WEST NEEBISH CHANNEL LT 17	5	46	14	19.70058	84	10	39.72020
124	METH	5	46	14	34.12777	84	10	54.43277
125	WEST NEEBISH CHANNEL LT 9	5	46	12	35.42562	84	9	3.17052
126	WEST NEEBISH CHANNEL LT 14	5	46	13	10.25697	84	9	57.82343
127	RC 16	5	46	13	36.74544	84	10	21.18908
128	WEST NEEBISH CHANNEL LT 16	5	46	13	36.82123	84	10	21.25101
129	MOON ISLAND LEADING LT	5	46	13	7.34043	84	10	15.10869
130	WP9E	5	46	12	35.36191	84	9	3.15566
131	WP9W	5	46	12	35.32975	84	9	3.26470
132	MUN	2	46	13	9.46841	84	12	16.00601
133	PIN	5	46	10	33.99149	84	12	18.98204
134	ROACH	5	46	11	9.33550	84	10	45.46365
135	WINTER POINT RANGE F LT	5	46	13	33.83679	84	8	38.65747
136	POST 8522 CHS	5	46	14	24.76209	84	6	39.68178
137	74 USLS 1878	5	46	14	16.99000	84	6	12.86200
138	ST JOE ML N SILO	5	46	12	43.96419	84	3	39.83972
139	REF MON 14 IWC 1911	5	46	12	22.61900	84	5	14.36800
140	ROCKY POINT USLS 1894	5	46	10	44.19600	84	7	18.49500
141	ROCKY POINT TOWER	5	46	10	2.67280	84	8	14.31200
142	REF MON 13 IWC 1911	5	46	11	27.99400	84	4	17.88700
143	REF MON 15 IWC 1911	5	46	14	26.61200	84	6	10.96100
144	POINT AUX FRENES LT 21	5	46	8	14.90042	84	1	17.02942
145	WWUP TV MAST	5	46	3	35.64270	84	5	57.20490
146	WGTQ TV MAST	5	46	3	7.98990	84	6	38.83040
147	201 USLS 1894	5	46	9	26.38700	84	5	9.28700
148	203 2	5	46	8	46.68601	84	3	37.32030
149	204 2	5	46	9	40.96167	84	0	46.14533
150	PAF 21	5	46	8	14.85532	84	1	17.04120
151	HAY POINT RANGE F LT	5	46	7	36.49955	83	59	58.52242
152	HAY POINT RANGE R LT	5	46	7	29.84608	83	59	46.51624
153	206 USLS 1894	5	46	7	30.83600	84	0	2.95600

ST MARYS RIVER OPR-X278-HFP
LIST OF GEOGRAPHIC POSITIONS

SPN	STATION NAME	GPN CODE K	LATITUDE DEG	MN	SEC	LONGITUDE DEG	MN	SEC	G-NB
154	ROUND ISLAND LIGHT	5	46	6	33.21675	84	1	11.59536	
155	RILT	5	46	6	33.26141	84	1	11.43134	
156	ROUND ISLAND LIGHTHOUSE	5	46	6	32.29799	84	1	11.59841	
157	POINT AUX FRENES PASSING LIGHT	5	46	7	53.08565	84	1	35.52795	
158	BASS	5	46	6	17.82589	83	59	50.26285	
159	LIME ISLAND DOCK NORTH LT	5	46	5	17.67892	84	0	46.66674	
160	LIME ISLAND DOCK SOUTH LT	5	46	5	9.92154	84	0	46.75295	
161	205 2	5	46	7	24.08605	84	1	51.33207	
162	GOETZVILLE MICROWAVE TOWER	5	46	2	46.97680	84	5	27.75900	
163	RABER	5	46	5	24.77847	84	3	58.99252	
164	GLENN	5	46	3	57.52408	84	1	52.61834	
165	CLAY	5	46	2	41.04800	84	0	6.02487	
166	LINK	5	46	3	55.60382	83	58	29.45339	
167	SQUAW ISLAND LIGHT	5	46	2	19.69979	83	54	15.00431	
168	SWEETS POINT LIGHT	5	46	2	19.32374	83	56	9.66544	
169	215 USLS 1894	5	46	2	40.84600	84	0	6.30900	
170	PIPE ISLAND TWIN LIGHT	5	46	1	34.26800	83	53	29.24500	
171	DICK	5	46	2	19.33801	83	56	9.75459	
172	SWEET	5	46	1	46.67431	83	56	40.73220	
173	PAF 32	5	46	1	49.77525	83	58	52.62893	
174	211 USLS 1894	5	46	4	29.89800	83	58	34.52100	
175	LIM	5	46	4	29.97139	83	58	34.19248	
176	CRIB	5	46	10	15.70774	84	8	7.91853	
177	DIANE	5	46	6	56.88542	83	59	15.54343	
178	HART	5	46	5	33.23497	83	59	15.48978	
179	ED	5	46	5	56.07959	83	58	43.07141	
180	WINTER POINT RANGE R LT	5	46	14	4.23727	84	9	12.77138	
181	REF MON 9 IWC 1911	5	46	3	47.15300	83	56	56.09400	
182	OAK	5	46	17	33.16186	84	12	43.94496	
183	ROCKY TOWER	5	46	10	12.2	84	08	17.4	

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [X] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
HrP-2	Michigan/Ont.	St. Marys River	7-25-89

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-X278	HrP-10-3-89	H-10300	NAD 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
Light	West Neebish Channel Lt 17	46 14	19.700	84 10	39.720		F-3-6-L	14882
Light	West Neebish Channel Lt 16	46 13	36.821	84 10	21.251		F-3-6-L	14882
Light	West Neebish Channel Lt 14	46 13	10.256	84 09	57.823		F-3-6-L	14882
Light	Moon Island Leading Lt	46 13	07.340	84 10	15.108		F-3-6-L	14882
Light	West Neebish Channel Lt 9	46 12	35.425	84 09	03.170		F-3-6-L	14882
Light	Winter Point Range R Lt	46 14	04.237	84 09	12.771		F-3-6-L	14882
Light	Winter Point Range F Lt	46 13	33.836	84 08	38.657		F-3-6-L	14882

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	**NAME**	**ORIGINATOR**
OBJECTS INSPECTED FROM SEAWARD		☐ PHOTO FIELD PARTY ☐ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

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

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.

EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions** require 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

II. TRIANGULATION STATION RECOVERED

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

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

SUPERSEDES NOAA FORM 76-40 (2-71) WHICH IS OBSOLETE, AND EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION.

☆ U.S.GPO:1975-0-665-080/1155

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [ ] TO BE REVISED
- [X] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
AHP-2	MICHIGAN/ONT	ST. MARY'S RIVER	9-7-89

The following objects HAVE [ ] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-X278	AHP- 10-3-89	H-10300	NAD 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	POSITION LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	POSITION LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	METHOD AND DATE OF LOCATION FIELD	CHARTS AFFECTED
TOWER	ROCKY POINT TOWER	46°10′	02.6728″	84°08′	14.3120″			14882

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	**NAME**	**ORIGINATOR**
OBJECTS INSPECTED FROM SEAWARD		☐ PHOTO FIELD PARTY ☐ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

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

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.

EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions** require 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

II. TRIANGULATION STATION RECOVERED

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

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

☆ U.S. GPO:1975-0-665-080/1155

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [X] TO BE CHARTED
- [ ] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
AHP-2	MICHIGAN/ONT	ST. MARY'S RIVER	9-7-89

The following objects HAVE [ ] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-X278	AHP-10-3-89	H-10300	NAD 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
TOWER	ROCKY TOWER	46°10'	12.2	84°08'	17.4"		MAY 23, 1989 F-5-L	14882

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	**NAME**	**ORIGINATOR**
OBJECTS INSPECTED FROM SEAWARD		☐ PHOTO FIELD PARTY ☐ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

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

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.

EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions** require 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

II. TRIANGULATION STATION RECOVERED

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

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
Norfolk, Virginia 23510-1114

23 January 1991

Commander
Ninth Coast Guard District
Aids To Navigation Office
1240 East 9th Street
Cleveland, Ohio 44199-2060

Dear Sir,

The following items are being submitted for inclusion into the dangers to navigation report:

REPORT OF DANGER TO NAVIGATION

Hydrographic Survey Registry Number...H-10300
State.....Michigan/Ontario
General Locality.....St. Marys River
Locality.....Gogomain River to Sawmill Point
Project Number.....OPR-X278
Surveyed by.....Atlantic Hydrographic Party 2

Objects Addressed:

1) An uncharted dangerous underwater rock which is covered by 4 feet at the level of chart datum, was found in the vicinity of Latitude 46°12'02.78"N, Longitude 84°09'16.90"W. The presently charted depths at this location are 9 to 13 feet.

2) Uncharted dangerous underwater rocks which are covered by 6 feet at the level of chart datum, were found in the vicinity of Latitude 46°12'34.88"N, Longitude 84°06'44.07"W. The presently charted depths at this location are 11 to 15 feet.

AWOIS # 8104

3) An uncharted dangerous underwater rock which is covered by 5 feet at the level of chart datum, was found in the vicinity of Latitude 46°12'27.22"N, Longitude 84°06'33.65"W. The presently charted depths at this location are 11 to 12 feet.

4) An uncharted dangerous underwater rock which is covered by 12 feet at the level of chart datum, was found in the vicinity of Latitude 46°11'26.89"N, Longitude 84°07'24.70"W. The presently charted depths at this location are 15 to 17 feet.

Affected Nautical Charts:

Object 1

CHART NUMBER	EDITION NUMBER	DATE	CHART HORIZ DATUM	GEOGRAPHIC POSITION LATITUDE (N)	LONGITUDE (W)
14883	37	6/89	NAD 83	46°12'02.78"	84°09'16.90"

Object 2

CHART NUMBER	EDITION NUMBER	DATE	CHART HORIZ DATUM	GEOGRAPHIC POSITION LATITUDE (N)	LONGITUDE (W)
14883	37	6/89	NAD 83	46°12'34.88"	84°06'44.07"

Object 3

CHART NUMBER	EDITION NUMBER	DATE	CHART HORIZ DATUM	GEOGRAPHIC POSITION LATITUDE (N)	LONGITUDE (W)
14883	37	6/89	NAD 83	46°12'27.22"	84°06'33.65"

Object 4

CHART NUMBER	EDITION NUMBER	DATE	CHART HORIZ DATUM	GEOGRAPHIC POSITION LATITUDE (N)	LONGITUDE (W)
14883	37	6/89	NAD 83	46°11'26.89"	84°07'24.70"

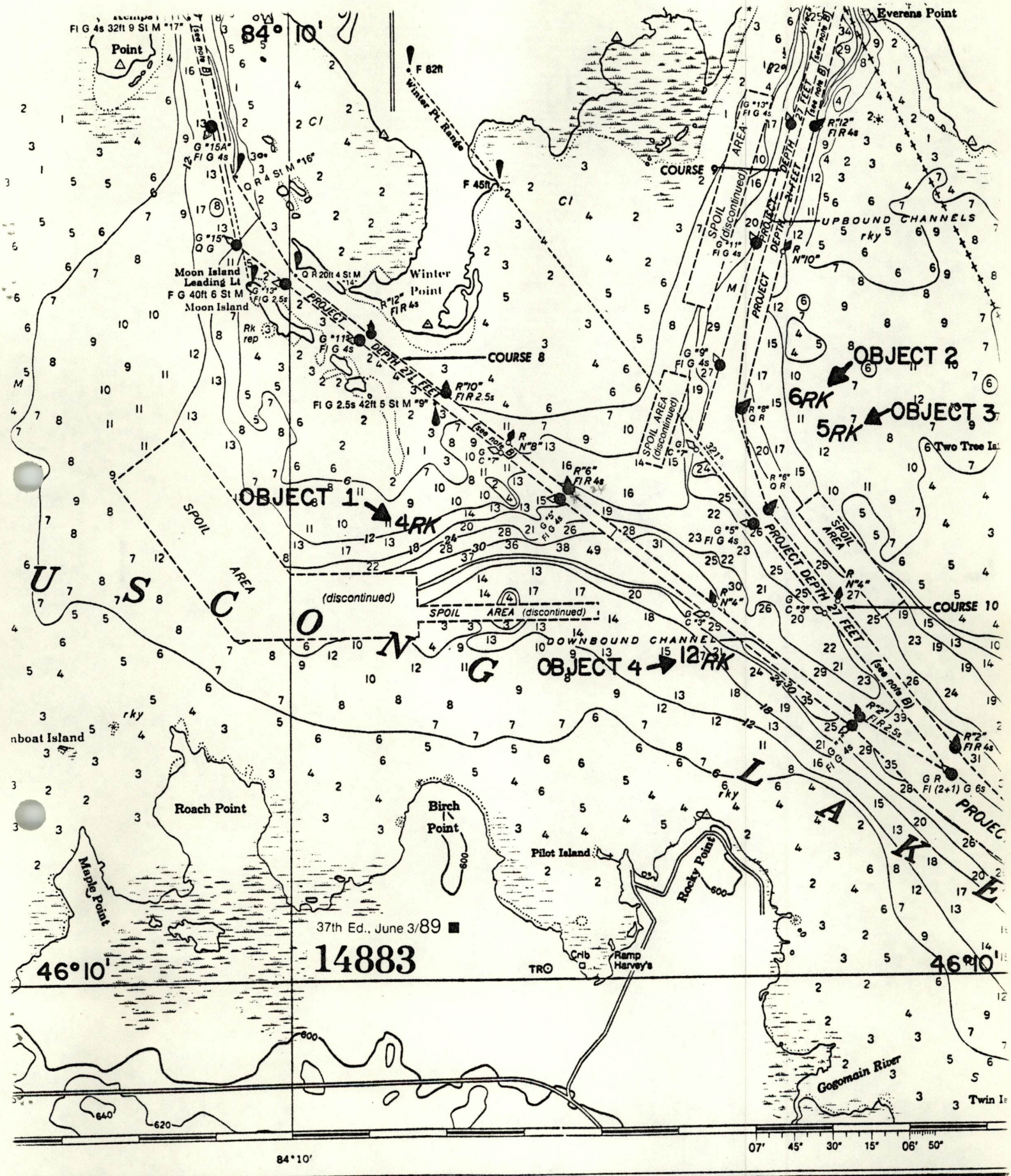
Questions concerning this report should be directed to the Atlantic Hydrographic Section, NOAA by calling 804 441-6746 or FTS 827-6746.

Sincerely,

for R. L. Sanocki

Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

Attachments



EET

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRAT
NATIONAL OCEAN SERVICE

APPROVAL SHEET

BASIC HYDROGRAPHIC SURVEY
OPR-X278-AHP
AHP-10-3-89
H-10300
1989

This basic hydrographic survey was conducted in accordance with the project instructions for OPR-X278-HFP, the hydrographic manual, the hydrographic survey guidelines, and the Field Procedures Manual. The survey data and reports were completed and reviewed in their entirety and all supporting records were also checked.

This survey is a complete basic hydrographic survey for the area described in Section B of this report.

V. Dale Ross
LT NOAA
Chief, Atlantic Hydrographic Party Two

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

WATER LEVEL NOTE FOR HYDROGRAPHIC SHEET

Processing Division: N/CG2441-Verification Section

Hourly heights are approved for: See Remarks
Water Level Station

Period: May 9, 1989 to August 11, 1989

HYDROGRAPHIC SHEET: H-10300

OPR-X278-AHP

Locality: St. Mary's River, MI

Plane of reference: Low Water Datum (IGLD ---:--- Feet)

Remarks: Use the following Water Level Station and corresponding Low Water Datum for this survey.

ROCKY POINT, MI (907-6010) 576.9'

Harry A. Lippincott
Chief, Great Lakes Acquisition Unit

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10300

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
BIRCH POINT	X									1
EVERENS POINT	X									2
GOGOMAIN RIVER	X									3
KEMPS POINT	X									4
MAPLE POINT	X									5
MICHIGAN (title)	X									6
MOON ISLAND	X									7
MUNUSCONG CHANNEL	X									8
MUNUSCONG LAKE	X									9
NEEBISH ISLAND	X									10
ONTARIO	X									11
PILOT ISLAND	X									12
ROACH POINT	X									13
ROCKY POINT	X									14
SAWMILL POINT	X									15
STEAMBOAT ISLAND	X									16
ST. JOSEPH ISLAND	X									17
ST.MARYS RIVER (title)	X				Approved:					18
WINTER POINT	X									19
					Charles E. Harrington					20
					Chief Geographer - N/CG2x5					21
					NOV - 2 1990					22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 61-29
(12-71)

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

REFERENCE NO.
N/CG244-51-91

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY *(Check)*:

☐ ORDINARY MAIL ☐ AIR MAIL
☒ REGISTERED MAIL ☐ EXPRESS
☐ GBL *(Give number)* _____

TO:

Chief, Data Control Section, N/CG243
NOAA/National Ocean Service
Room 151, WSC-1
Rockville, MD 20852

DATE FORWARDED
19 July 1991

NUMBER OF PACKAGES
2 boxes, 1 tube

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H-10300

Michigan--Ontario, St. Marys River,
Gogomain River to Sawmill Point

Pkg. 1 Tube:

1 Smooth Sheet
1 Smooth Position Overlay
2 Smooth Sounding Overlays
4 Smooth Field Sheets

Pkg. 2 Box

1 Accordion file containing Echograms, Data Printouts, Corrector Tape Printouts for VESNO 517 for JD's--129-132, 137-138, 142-143, 146, 150-153, 156-159, 213, 223 fathogram only
1 Accordion file containing Echograms, Data Printouts, Corrector Tape Printouts for VESNO 1292 for JD's--132, 135-139, 151-152, 156-158, 237
VESNO 0520 for JD's--135, 142-146

Pkg. 3 box

1 **Original Descriptive Report**
1 Cahier containing Position printout, and Control File Listing,
1 Cahier containing Sounding printout, L-File
1 Envelope containing supplemental data from printouts
1 Binder containing data removed from original Descriptive Report

FROM: *(Signature)*

Norris A. Wike

RECEIVED THE ABOVE
(Name, Division, Date)

D. S. Clark
July 22, 1991

Return receipted copy to:

Atlantic Hydrographic Section, N/CG24411
439 W. York Street
Norfolk, VA 23510-1114

☆U.S.GPO:1983-0-664-006/1192

07/18/91

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H-10300

NUMBER OF CONTROL STATIONS		20
NUMBER OF POSITIONS		3201
NUMBER OF SOUNDINGS		15823
	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	102	11/07/89
VERIFICATION OF FIELD DATA	285	08/30/90
ELECTRONIC DATA PROCESSING	23	
QUALITY CONTROL CHECKS	97	
EVALUATION AND ANALYSIS	105	06/26/91
FINAL INSPECTION	31	03/19/91
TOTAL TIME	643	
ATLANTIC HYROGRAPHIC SECTION APPROVAL		07/03/91

OFFICE OF COAST AND GEODETIC SURVEY
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT

SURVEY NO.: H-10300 FIELD NO.: AHP-10-3-89

Michigan--Ontario, St. Marys River, Gogomain River to Sawmill Point

SURVEYED: 9 May through 11 August 1989

SCALE: 1:10,000 PROJECT NO.: OPR-X278

SOUNDINGS: RAYTHEON DE-719C Fathometer, Lead Line

CONTROL: MOTOROLA Falcon 484 Mini-Ranger (Range/Range), KRUPP ATLAS Polarfix (Range/Azimuth), HP-3810 EDM Total Station (Range/Azimuth)

Chief of Party.....V. D. Ross

Surveyed by.....C. J. Bradley
.....E. A. Lake
.....J. L. Budlong
.....G. D. Hendrix
.....G. H. Leonard
.....V. P. Lanius
.....M. J. McMann
.....M. Mangual-Ortiz
.....B. C. Weber

Automated Plot by.....XYNETICS 1201 Plotter (AHS)

1. INTRODUCTION

a. Application of shoreline features north of Kemps Point and south of Saw Mill Point was complicated by the hydrographer's effort to locate piers, piles, etc., using hydrographic methods. The methods described in section 7.1.1. of the Field Procedures Manual addresses the requirements for shoreline verification. The FPM states that features lying along or near the shoreline or other accurately plotted reference points may be verified by visual inspection.

b. Notes in the Descriptive Report were made in red during office processing.

2. CONTROL AND SHORELINE

a. Control is adequately discussed in sections F., G., and S. of the Descriptive Report.

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1927 (NAD 27). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the survey datum and the North American Datum of 1983 (NAD 83). To place this survey on the NAD 83 datum move the projection lines 0.056 seconds (1.7 meters or .170 mm at the scale of the survey) south in latitude, and 0.092 seconds (2.0 meters or .20 mm at the scale of the survey) east in longitude.

b. Shoreline originates with 1:10,000 scale enlargements of 1:20,000 scale final reviewed Class III photogrammetric manuscripts TP-00353, TP-00356 and TP-00357 of 1984-85. Shoreline revisions originating with the present survey are shown in red on the smooth sheet.

Photogrammetric manuscripts for this area were compiled at a scale of 1:20,000; the 1:10,000 scale enlargements of the manuscripts provided were not at 1;10,000 scale. As a result the transfer of the shoreline and alongshore features to the smooth sheet proved to be a formidable task requiring additional time and effort by office personnel.

3. HYDROGRAPHY

a. Soundings at crossings are in excellent agreement and comply with the criteria found in sections 4.6.1 and 6.3.4.3. of the HYDROGRAPHIC MANUAL.

b. The standard six (6), twelve (12), eighteen (18), twenty-four (24) and thirty (30) foot depth curves were drawn in their entirety. The zero (0) foot depth curve was not drawn in its entirety because of vessel safety. The supplemental three (3) foot depth curve was drawn to show additional bottom relief. Some brown and dashed curves were also drawn to delineate bottom relief.

c. The development of the bottom configuration and determination of least depths is considered adequate with the following exceptions:

1) Five (5) Rocks with known depths of 5 feet and 6 feet, in the vicinity of Latitude 46°12'33"N, Longitude 84°06'40"W were not adequately developed during field operations. Additional lines of hydrography should have been run to adequately delineate the rock field. Additional rocks may have been located if a thorough examination of the area

AWOIS #8104

had been conducted. It is recommended that rocks with known depths of 5 feet (5 *Rk*) and 6 feet (6 *Rk*) be charted as shown on the present survey.

2) The following shoal and obstructions should have been developed during field operations:

Item No.	Depth	Latitude (N)	Longitude (W)	Surrounding Depth	
	24	46°12'10.46"	84°08'09.73"		# 8109
5	2	46°14'04.90"	84°06'52.16"	5	AWOIS # 8108
	7	46°12'46.76"	84°11'07.02"	9	# 8105

Additional lines of hydrography should have been run to adequately delineate the shoal and obstructions. It is recommended that the area be charted as shown on present survey.

3) Shoals with depths to 5 feet running along Latitude 46°11'35"N, west of Longitude 84°08'30"W was not adequately developed by the present survey. # 8101 Reduced line spacing would have provided a better portrayal of the bottom topography in the area outside of the charted spoil area. The shoal is approximately 80 meters south of the eastern portion of a charted spoil area in the vicinity of Latitude 46°11'39"N, Longitude 84°08'45"W.

The lack of developments of items discussed above does not degrade the overall quality of the present survey.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports conform to the requirements of the HYDROGRAPHIC MANUAL.

5. JUNCTIONS

FS-8159 (1983) to the northeast (Canadian)
H-10278 (1988) to the northwest
H-10299 (1989) to the east

Adequate junctions were effected with junctional surveys H-10278 (1988) and H-10299 (1989). There are no junctional surveys to the west of the present survey; however, the present survey soundings are in general harmony with the charted hydrography. The following should be noted:

In the vicinity of Latitude 46°15'02.80"N, Longitude 84°10'33.57"W, piles and pier shown on junctional survey H-10278 (1988) are not shown on the present survey. The present survey located a crib with an elevation of 8-ft above LWD, in Latitude 46°15'03.19"N, Longitude 84°10'33.28"W. There was no

discussion of the differences between junctional survey H-10278 (1988) and the present survey in the Descriptive Report. The piles and pier were brought forward from junctional survey H-10278 (1988) to supplement the present survey.

A standard junction could not be effected with the Canadian Hydrographic Survey FS-8159 (1983). The junctional survey is in substantial agreement with the present survey. Depths generally agree to within 0.5-foot. Any adjustments to the depths curves in the junctional areas of the present survey will need to be made at headquarters on the chart during compilation.

6. COMPARISON WITH PRIOR SURVEYS

LS-1697	(1936)	1:10,000
LS-1698	(1936)	1:10,000
LS-1699	(1936)	1:10,000
LS-2043	(1953)	1:10,000
LS-2044	(1953)	1:10,000

The five (5) prior surveys listed above cover the present survey area in its entirety.

a) Prior survey depths from LS-1697 (1936) show excellent comparison with the present survey soundings.

b) Prior survey depths from LS-1698 (1936) show a general trend of being one (1) foot deeper than present survey soundings. Scattered depths from survey LS-1698 (1936) are 2 to 3 feet shoaler than present survey soundings. Changes noted between prior survey LS-1968 (1936) and the present survey are as follows:

1) Numerous shoreline changes between the prior and present surveys are apparent throughout the common area. These changes may be attributed to either natural changes, differences in the plane of reference, water levels at the time of the prior shoreline delineation, or any combination of the reasons listed.

2) The following areas have several charted islands originating with prior survey LS-1698 (1936). The present survey found no islands. The areas are:

Number of islands	Latitude (N)	Longitude (W)	Present Soundings
4	46°13'44"	84°10'09"	2-5
5	46°13'33"	84°10'00"	2-4

These islands are not shown on the shoreline manuscript. It is recommended that the areas be charted as shown on present survey.

3) Charted islands in the vicinity of Latitude 46°13'13"N, Longitude 84°09'51"W and Latitude 46°12'45"N, Longitude 84°09'40"W are shown on the prior survey. As stated by the field unit the islands no longer exist. It is recommended that the area be charted as shown on present survey with a notation shallow.

4) Charted islands in the vicinity of Latitude 46°13'00"N, Longitude 84°10'07"W and Latitude 46°12'40.5"N, Longitude 84°09'35.0"W have diminished in size since the prior survey was conducted. The field unit verified the islands as shown on the chart. No change in charting status is recommended.

5) A charted shoal with depths of 4 and 5 feet in the vicinity of Latitude 46°12'50"N, Longitude 84°06'41"W is shown on the prior survey as isolated 4-ft and 5-ft soundings. The shoal was not adequately developed by the present survey. Present survey depths in the area range from 8 to 9 feet. The 4-ft and 5-ft soundings were brought forward to supplement the present survey. It is recommended that the shoal be charted as shown on present survey. #8106

6) A charted 10-ft sounding, in the vicinity of Latitude 46°13'41.2"N, Longitude 84°06'55.0"W, originates with the prior survey. The sounding was neither verified nor disproved by the present survey. Present survey depths in the area range from 14 to 18 feet. The sounding was brought forward to supplement the present survey. It is recommended that the sounding be retained as charted. #8107

7) A charted 2-ft sounding, in the vicinity of Latitude 46°13'51"N, Longitude 84°06'14"W, originates with the prior survey. The sounding was investigated by the present survey. Surrounding depths from present survey range from 4 to 6 feet. It is recommended that the area be charted as shown on present survey.

8) A charted rock awash, in Latitude 46°13'50"N, Longitude 84°06'05"W, originates with the prior survey. The rock was found by the present survey in Latitude 46°13'47.99"N, Longitude 84°06'06.09"W with a known depth of 3 feet. It is recommended that the rock awash be deleted and a rock with a known depth of 3 feet (3 *Rk*) and a danger curve be charted as shown on present survey.

9) A wire drag area, swept to a depth of 19 feet, in the vicinity of Latitude 46°11'51"N, Longitude 84°07'15"W is shown on the prior survey. There are no conflicts between prior survey LS-1698 (1936) effective depths and the present survey soundings.

10) Numerous uncharted dumping grounds shown on the prior survey were investigated during survey operations. It is recommended that these areas be charted as shown on the present survey.

c) Prior survey depths from LS-1699 (1936) show a general trend of varying plus or minus (±) 1 foot from present survey soundings. Changes noted between prior survey LS-1699 (1936) and the present survey are as follows:

1) Numerous shoreline changes between the prior and present surveys are apparent throughout the common area. These changes may be attributed to either natural changes, cultural changes, differences in the plane of reference, water levels at the time of the prior shoreline determination, or any combination of the reasons listed.

2) A dumping ground is shown on the prior survey in the vicinity of Latitude 46°11'30"N, Longitude 84°09'15"W. The area was investigated during survey operations. It is recommended that the area be charted as shown on present survey.

3) A wire drag area, swept to a depth of 19 feet, in the vicinity of Latitude 46°11'24"N, Longitude 84°06'30"W is shown on the prior survey. There are no conflicts between prior survey LS-1699 (1936) effective depths and the present survey soundings.

4) A charted rock, in Latitude 46°11'09.5"N, Longitude 84°11'09.0"W is shown on the prior survey as an island. The present survey located a rock pile in Latitude 46°11'07.89"N, Longitude 84°11'08.96"W. It is recommended that the charted rock be deleted and the area charted as shown on present survey.

5) Two (2) charted islands, in the vicinity of Latitude 46°10'12.0"N, Longitude 84°06'41.8"W are shown on the prior survey. The islands were investigated by the present survey. The two (2) islands are now one (1) island. It is recommended that the area be revised and charted as shown on present survey.

6) A charted island in the vicinity of Latitude 46°10'06"N, Longitude 84°06'45"W is shown on the prior survey. The island was verified by the present survey as shown on the shoreline manuscript. It is recommended that the area be revised and charted as shown on present survey.

d) Prior survey depths from LS-2043 (1936) show a general trend of varying plus or minus (±) one foot from present survey soundings. Changes noted between prior survey LS-2043 (1936) and the present survey are as follows:

A charted shoal with a depth of 4 feet in the vicinity of Latitude 46°11'43"N, Longitude 84°08'37"W is shown on the prior survey as an isolated 4-ft sounding. The shoal was neither verified nor disproved by the present survey. The 4-ft sounding was brought forward from the prior survey to supplement the present survey. It is recommended that the shoal be charted as shown on present survey. #8102

e) Prior survey depths from LS-2044 (1953) show a general trend of being one (1) foot shoaler that present survey soundings.

The differences between the above prior surveys and the present survey depths can be attributed to improved hydrographic surveying methods and equipment.

Except as noted above the present survey is adequate to supersede the prior surveys within the common area.

7. COMPARISON WITH CHART 14883 (36th Edition, May 31/86)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys. The previously discussed prior surveys require no further consideration. The hydrographer Descriptive report. In addition to the recommendations in the Descriptive Report the following should be noted:

1) AWOIS item #2347, a charted dangerous sunken wreck, "BRUCE", with a known depth of 23 feet (23 *Wk*), in Latitude 46°14'22.75"N, Longitude 84°06'31.69"W originates

with an unknown source. Chart Letter 212 of 1982 (CL212/82) located the item in its present location and determined the presently charted depth. The wreck was investigated by the present survey with negative results. The field unit did locate a pier in ruins, in Latitude 46°14'22.80"N, Longitude 84°06'31.44"W with a leadline least depth of 22 feet. The charted wreck is approximately 5 meters to the northwest of the pier ruins shown on the present survey. It is recommended that the charted dangerous sunken wreck (23 *Wk*) be deleted and an obstruction (pier ruins) with a known depth of 22 ft (22 *Obstr (pier ruins)* and a danger curve be charted.

2) AWOIS item #6311, a charted submerged crib, in Latitude 46°14'35.3"N, Longitude 84°10'48.7"W originates with Kirshner's Revisory Survey of 1944. The field unit located a submerged crib in Latitude 46°14'34.70"N, Longitude 84°10'51.73"W. The charted submerged crib is approximately 67 meters to the northeast of the crib shown on the present survey. Because of a shoreline verification problem as discussed in section 1.a. of this report the submerged crib was not disproved. It is recommended that the charted submerged crib be retained. It is also recommended that the crib located by the present survey be charted.

3) A charted shoal with depths of 4 feet in the vicinity of Latitude 46°13'56"N, Longitude 84°06'24"W was disproved by the present survey. Surrounding depths from the present survey are 6 to 15 feet. It is recommended that the area be charted as shown on present survey.

4) Three (3) charted 3-ft soundings, in the vicinity of Latitude 46°11'36"N, Longitude 84°08'49"W, originate with Engineer Blueprints of 1941. The 3-ft soundings are adjacent to a charted spoil area. Considering the irregular bottom and proximity to the spoil area; it is recommended that the area be charted as shown on the present survey.

5) The following charted spoil areas were investigated by the present survey:

Latitude (N)	Longitude (W)
46°13'30"	84°07'08"
46°12'30"	84°07'33"
46°11'51"	84°06'21"

A letter from Mr. Harold J. Lawson of the U. S. Army Corps of Engineers, Detroit District, stated that the

spoil areas are still active. See correspondence section of the Descriptive Report. It is recommended that the spoil areas be retained as charted.

6) The charted notations, rky, in the vicinity of Latitude 46°11'13"N, Longitude 84°11'00"W and Latitude 46°10'50"N, Longitude 84°07'09"W originate with Rope's Revisory Survey of 1950 and should be retained as charted.

7) A foul area in the vicinity of Latitude 46°10'48"N, Longitude 84°11'24"W was delineated by the present survey. It is recommended that the area be charted as shown on present survey.

8) An obstruction (stump), in Latitude 46°11'16.8"N, Longitude 84°10'49.2"W was located by the present survey. The obstruction bares 2 feet at LWD. It is recommended that the obstruction be charted as shown on present survey.

9) A foul area running along the north shoreline of Roach Point was delineated by the present survey. Several rocks were located within the foul area. It is recommended that the area be charted as shown on present survey.

10) Charted rocks running along the northern shoreline of Birch Point fall within a foul area delineated by the present survey. It is recommended that the area be revised and charted as shown on present survey.

11) In the vicinity of Latitude 46°10'16"N, Longitude 84°08'06"W an area has been delineated with a danger curve on the chart. The area was investigated by the present survey. A crib was located in Latitude 46°10'15.70"N, longitude 84°08'07.92"W. Leading away from the crib in a northeasterly direction is a submerged jetty. It is recommended that the charted danger curve be deleted and the area charted as shown on present survey.

12) A charted crib in the vicinity of Latitude 46°10'03.5"N, longitude 84°08'06.0"W was neither verified nor disproved by the present survey. It is recommended that the crib be retained as charted. #8100

13) A foul area around Pilot Island was delineated by the present survey. It is recommended that the area be revised and charted as shown on present survey.

14) Two (2) charted islands in the vicinity of Latitude 46°10'28"N, Longitude 84°07'41"W fall within a foul

area delineated by the present survey. It is recommended that the area be revised and charted as shown on the present survey.

15) Charted piers in the vicinity of Latitude 46°10'36.5"N, longitude 84°07'31.2"W and Latitude 46°10'43.5"N, Longitude 84°07'21.8"W fall within a foul area delineated by the present survey. It is recommended that the area be revised and charted as shown on present survey.

16) A charted rock with a danger curve in the vicinity of Latitude 46°10'15"N, Longitude 84°06'44"W was investigated by the present survey. A rock baring 4 feet at LWD was located in Latitude 46°10'15.20"N, Longitude 84°06'44.36"W. It is recommended that the charted rock be deleted and the area charted as shown on present survey.

17) A charted shoal with depths of 2 to 4 feet, in the vicinity of Latitude 46°12'12.0"N, Longitude 84°08'38.7"W, originates with a 1961 Corps of Engineer Blueprint for chart markup 1989. The shoal was not completely investigated by the present survey. The field unit performed an investigation with reduced line spacing in the vicinity of the 4-ft sounding. Surrounding depths from the present survey are 7 to 12 feet. It is recommended that the* 2-ft sounding be retained as charted. It is recommended that the 4-ft sounding be deleted, and the area revised and charted as shown on present survey.

* AWOIS 8103

18) A charted 2-ft sounding and two (2) charted islands, in the vicinity of Latitude 46°14'05"N, Longitude 84°06'49"W were not adequately investigated by the present survey. The two (2) islands are not shown on TP-00357 (1984-85). The islands were not seen during present survey operations. Surrounding depths from the present survey are 2 to 15 feet. An examination of the Canadian junctional survey FS-8059 (1983) shows shoal depths that are compatible with present survey depths in the area. Additionally, the junctional survey shows weeds in the area; islands are not shown. It is recommended that the area be revised and charted as shown on present survey.

Except as noted above the present survey is adequate to supersede the charted hydrography within the common area.

b. Controlling Depths

There are no conflicts between the present survey depths and channels project depths shown on the chart, however a 24 Ft obstruction was located alongside the channel within 50M SE of the West Neebish Channel Lighted Buoy No. 6 in lat. 46-12-10.46N, long 84-08-09.73W.

c. Dangers to Navigation

There were no dangers to navigation submitted by the field unit. During office processing of the present survey four (4) features and/or soundings were determined to be dangers to navigation. Information for inclusion into the Local Notice to Mariners was submitted to the Commander (oan), Ninth Coast Guard District, Cleveland, Ohio and N/CG222, Chart Information Section. A copy of the dangers to navigation report has also been sent to DMAHTC NAVINFONET.

d. Aids to Navigation

The hydrographer located eight (8) fixed and thirty-two (32) floating aids to navigation in the survey area. These aids appear adequate to serve their intended purpose.

8. COMPLIANCE WITH INSTRUCTIONS

This survey complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is an adequate basic survey. Additional work may be desirable at a opportune time on items discussed in sections 3. 6. and 7. of this report.

Douglas V. Mason
Cartographic Technician
Verification of Field Data

Norris A. Wike
Cartographer
Evaluation and Analysis

Robert R. Hill
Senior Cartographic Technician
Verification Check

APPROVAL SHEET
~~FE-3318S~~
H-10300

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Robert G. Roberson Date: 3 July 1991
Robert G. Roberson
Chief, Evaluation and Analysis Team
Atlantic Hydrographic Section

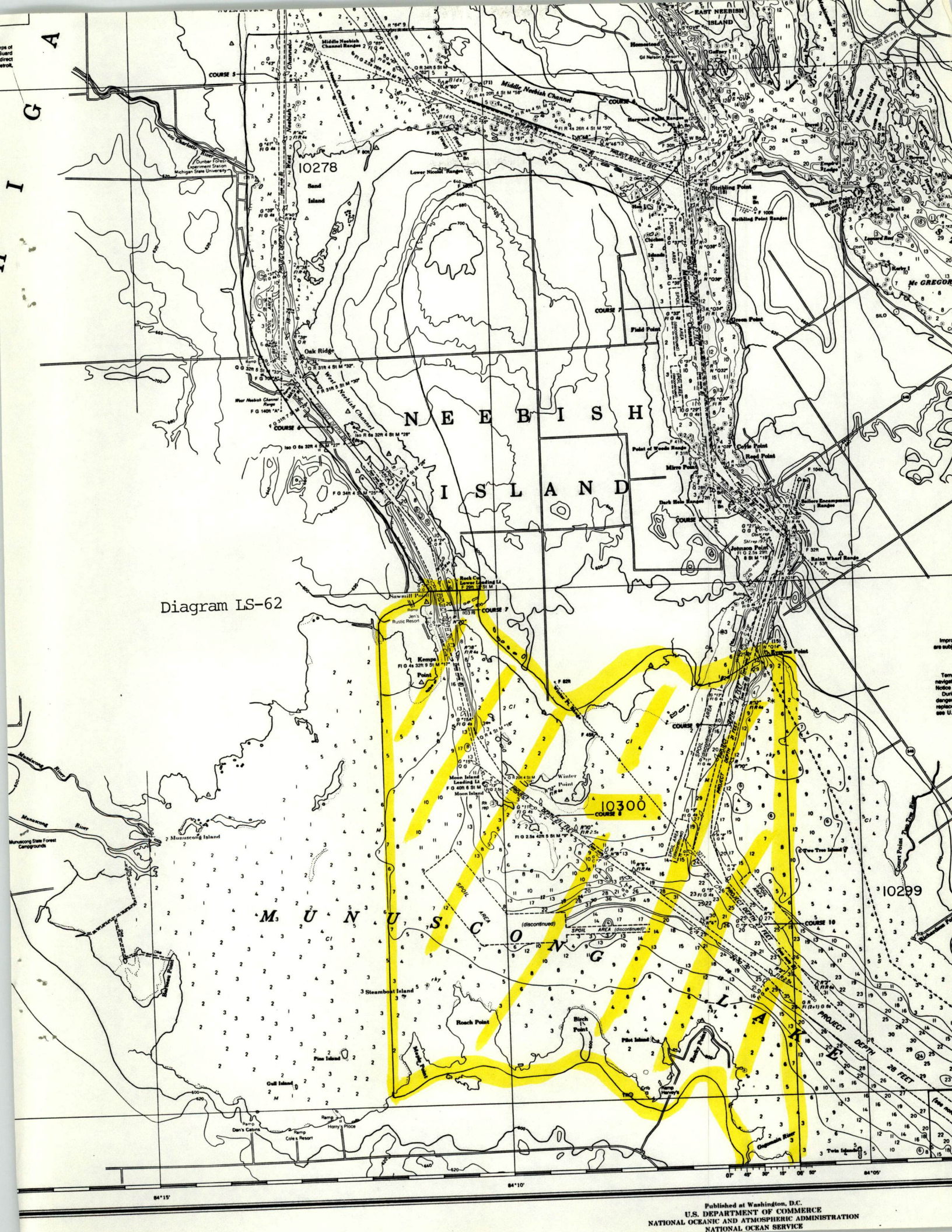
I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Christopher B. Lawrence Date: 3 July 1991
Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

****

Final Approval:

Approved: J. Austin Yeager Date: Aug 14, 1991
J Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey



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NATIONAL OCEAN SERVICE

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(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10300

INSTRUCTIONS

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

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
14882	10-10-91	Eli N Bodowinoc	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 7
14883	11-18-91	Eli N Bodowinoc	
		RE	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 7
14860	11-25-91	[illegible]	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 7 fully appl'd thru 14883
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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