

10275

Diagram 78-3

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. HFP-5-1-88
Registry No. H-10275

LOCALITY

State Virginia
General Locality .. York River
Sublocality Wormley Creek

1988

CHIEF OF PARTY
LTCDR D.A. Waltz

LIBRARY & ARCHIVES

DATE August 15, 1988

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

10275

Area 1

CHATS
12241
12238

CARTOGRAPHIC
SIGN OFF ON
FM. IN BACK

HYDROGRAPHIC TITLE SHEET

H-10275

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.

HFP-5-1-88

State Virginia

General locality ~~Yorktown~~ York River

Locality Wormley Creek

Scale 1:5,000 Date of survey 05/23/88 - 06/10/88

Instructions dated May 13, 1988 Project No. OPR-E244-HFP

Vessel Launch 0517

Chief of party LCDR David A. Waltz

Surveyed by LTJG Elizabeth A. Lake

Soundings taken by echo sounder, hand lead, pole Echo Sounder and Pole

Graphic record scaled by *EAL, MJM, JPO, DBE

Graphic record checked by EAL, MJM, JPO, DBE

Protracted by PDP/8e Computer (Field) Automated plot by AMC (Smooth Sheet)

Verification by AMC

Soundings in ~~feet~~ feet at ~~MLLW~~ MLLW

REMARKS: *EAL-Elizabeth A. Lake

MJM-Mark J. McMann

JPO-John P. Oswald

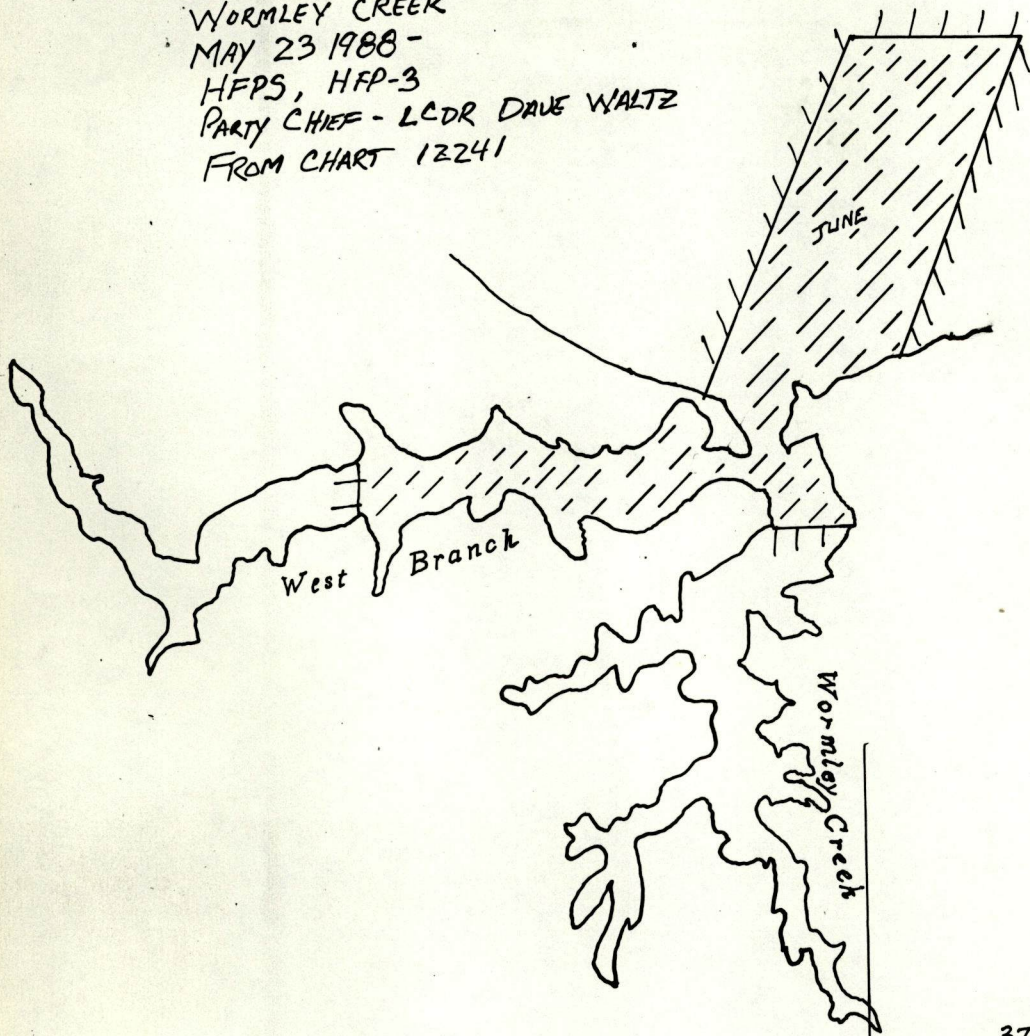
DBE-David B. Elliott

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

SURF & ALOIS check 8/5/88 mcr

SC 3-28-97

PROGRESS SKETCH
 OPR - E244 - HFP
 WORMLEY CREEK
 MAY 23 1988 -
 HFPS, HFP-3
 PARTY CHIEF - LCDR DAVE WALTZ
 FROM CHART 12241



LEGEND

MONTH	MAY	JUNE
SqNM Sdg	0	0.8
LNm Sdg	0	11.5
LNm to / from	0	7.0
LNm misc.	0	8.5
DP / BS	0	24 / 9
CONT STA SFT /	3	∅
REC.	4	∅
TIDE STA.	1	∅

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10275
HFP-5-1-88

Scale: 1:5,000
Chief of Party: LCDR David A. Waltz
Officer-in-Charge: LTJG Elizabeth A. Lake
Hydrographic Field Party 3
Launch 0517

A. PROJECT

This survey was accomplished under Project Instructions OPR-E244-HFP, Wormley Creek, Virginia, dated 13 May 1988.

The sheet letter specified is "A".

The purpose of this survey is to determine if changes have occurred since a NOAA 1984 CES and to expand coverage to define safe navigation in the approaches to Wormley Creek Marina and the U.S. Coast Guard Reserve Training Center (USCG RTC) Yorktown, located on West Branch.

B. AREA SURVEYED

This survey was conducted in the mouth of Wormley Creek and West Branch near Yorktown, Virginia. The area surveyed was bound by the following limits:

<u>Latitude</u>	<u>Longitude</u>
37 12' 45"N	076 28' 55"W
37 12' 52"N	076 28' 55"W
37 13' 00"N	076 28' 15"W
37 13' 27"N	076 28' 00"W
37 13' 27"N	076 27' 42"W
37 12' 45"N	076 28' 01"W

The survey area is a creek about 0.5 miles long and approximately 0.125 miles wide. The creek itself is shallow and requires close adherence to the aids which mark the entrance to Wormley Creek and the natural winding channel in West Branch which leads to the Yorktown USCG RTC small boat basin. On the Eastern shore of the creek is a private boat marina with fuel and dock facilities. When entering the mouth of the creek, several privately maintained buoys mark the navigable entrance to the east side of the creek where the marina is located.

The bottom composition in Wormley Creek is comprised greatly of dark grey mud. No anomalous bottom configurations were found in the survey area.

This survey was conducted from 23 May 1988 (DN 144) to 10 June 1988 (DN 162).

C. SOUNDING VESSEL

Soundings were obtained with NOAA Launch 0517. Launch 0517 is a 22 foot MonArk. All records are annotated with the vessel number.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The following sounding equipment was used on this survey:

MANUFACTURER	MODEL #	SERIAL #	LAUNCH	PERIOD
Raytheon	719-C	5799	0517	23 May 1988 - 10 June 1988

A graduated sounding pole was used for pole soundings taken in shoal waters two feet or less. With the exception of pole soundings, all sounding data was obtained using the equipment listed in the table above.

When using a Raytheon Model 719-C Fathometer, calibration checks were made at frequent intervals on each day of hydrography. Any necessary adjustments were made and noted on the fathogram. Any departure of the trace from the initial zero was corrected during the scanning process.

Velocity correctors were derived from direct comparisons of bar check data. One velocity correction table was generated for this survey from bar check data from fathometer s/n 5799 for use on all days of hydrography. Velocity tapes are provided with the survey data for application during smooth plotting at the Atlantic Marine Center (AMC). Printouts of all velocity tapes are included in the appendix. *

The depth of water throughout the survey area ranged from 0-²⁰~~18~~ ft. Bar checks were taken at the beginning and end of each day of hydrography from 5 - 30 ft. Bar check chains for all launches were measured prior to the start of this project to insure the five-foot interval marks were accurate. No corrections for chain length were necessary for this survey.

Settlement and squat correctors were determined on 31 May 1988 for launch 0517 using standard vertical leveling methods. A copy of the field data and graphs of the settlement and squat correctors vs. launch RPM are included in the appendix. These correctors will be applied via the TC/TI tape during processing of the smooth sheet at AMC.

* Removed from the original Descriptive Report and filed with the original field records.

The final field sheets were plotted using predicted tides from Hampton Roads, Virginia with applied zoning correctors provided in Hydrographic Project Instructions DPR-E244-HFP.

Actual tide heights were obtained in the field from tide station No. 863-7728 located at the Yorktown USCG RTC base, Wormley Creek, Virginia, lat. 37°12.9" N, long. 076°28.8'W. Smooth tides were requested from the Sea and Lake Levels Branch, N/DMA12, in a letter dated May 13, 1988. A copy of the letter is appended to this report.*

See smooth tide note appended to this report.

E. HYDROGRAPHIC SHEETS (FIELD)

The field sheets were prepared in the field using a PDP/8e computer and Houston Instrument Complot DP-3 plotter. Submitted with the survey are: one boat sheet; one semi-smooth sheet; one final field sheet; one final field overlay sheet; and one final field 1:2500 blow-up of the entrance to Wormley Creek. Mainscheme hydrography, aids to navigation, and signals are plotted on the smooth field sheet. Channel lines, detached positions, and bottom samples are shown on the smooth overlay.

Soundings on the final field sheets are corrected for transducer draft and predicted tides. Velocity correctors are not applied to soundings on the final field sheets. When a velocity tape is used to plot with the PDP/e, erroneous soundings are plotted. When the tape is eliminated soundings are plotted correctly. The velocity tapes are included with the survey data for application to soundings on the smooth sheet at AMC.

Parameter tape listings for the field sheets are included in the appendix of this report.* All field records are forwarded to AMC for verification and smooth sheet plotting on the Harris/7 computer and Xynetecs 1201 plotter.

F. CONTROL STATIONS

Two monumented control stations (signals 105, 106), one non-recoverable PK nail (signal 114) and one fixed aid to navigation (signals 102) were used to control this survey. All stations were located with Third-order, Class I standards.

Station Dobson was set in 1984 by third-order, Class I standards as a non-recoverable mark. A new position was established on Dobson in 1988 based on the datum of 1983.

Station Worm, Fuel, and WM-01 were established by HFP-3 personnel and positioned in 1988 by AMC personnel, Coastal Mapping Division and by field party personnel. The geodetic control report for the 1988 work will be submitted by N/MOA2222. *Geodetic Control Report HC 8803 dated June 7, 1988, submitted.*

A complete signal list is appended.

** Removed from the original D.R. and filed with original field records.*

It should be noted that the horizontal datum used for determining control was based on the NAD of 1983.

G. HYDROGRAPHIC POSITION CONTROL

Range/Azimuth was used to control this survey. During Range/Azimuth, initial azimuth checks were obtained and recorded at the beginning of each applicable day. An initial azimuth of 000°00'0", used in all cases, was checked and recorded at frequent intervals throughout the day.

The following equipment was used to control this survey:

EQUIPMENT	MANUF.	MODEL #	S/N	VESSEL
RPU	Motorola	Falcon 484	E0147	0517
CDU	Motorola	Falcon 484	E0007	0517
R/T	Motorola	Falcon 484	C2000	0517
R/T	Motorola	Falcon 484	E2920	0517
R/S	Motorola	Falcon 484	E2912	Code 2
R/S	Motorola	Falcon 484	E2915	Code 6
R/S	Motorola	Falcon 484	E2913	Code 7
Theodolite	Nikon	NT2D-20"	031045	
Total	Hewlett	HP-3808A	723A00727	
Station	Packard			

Motorola Falcon 484 equipment was calibrated in accordance with AMC OPORDER 86, dated 11/20/86. True distances for baseline calibrations were obtained using a HP-3810 total station system.

Baseline calibration log sheets and graphs (Attachments "1" and "2") are included in the fan folder.

Critical system checks of the Falcon equipment were performed prior to and after each day of hydrography. The difference (DELTA) between the average daily system check correctors and the corresponding baseline correctors were observed within the ~~2~~³ meter rejection limit set forth in AMC OPORDER 86.

All Mini-ranger system check correctors were determined using the critical fixed point method. True distances for the critical checks were obtained by inverse computations between Third-order positions using RK 407. All system check data was recorded directly in the sounding volumes and listed for each day in the Abstract of Electronic Position Control which is appended to this report (Attachment 12).*

There was no change in the Falcon Mini-ranger corrector for opening and closing baseline calibrations. The baseline calibration corrector was used as the final electronic corrector for all semi-smooth and final field sheet plotting.

** Removed from the original D.R. and filed with original field records.*

H. SHORELINE - *See section 2. b. of the Evaluation Report.*

Shoreline verification was not required for this survey.

No shoreline was drawn on the final field sheets. Shoreline manuscripts were not provided with this survey and the shoreline from the chart enlargement for Wormley Creek could not be used to reference shoreline based on a change in the horizontal datum from the datum of 1927 to the datum of 1983.

The following control stations were located seaward of the shoreline:

SIGNAL #	NAME
=====	=====
102	WORMLEY CREEK ENTR LT 1

Locations for all control stations used on the survey can be found on the signal list appended to this report.

I. CROSSLINES - *See section 3. a. of the Evaluation Report.*

Channel lines agreed well with mainscheme hydrography run normal to the channel.

One vessel (Launch 0517) and one sounding instrument (S/N 5799) were used to collect all sounding data. *Sounding pole was used in depths less than two (2) feet. See section D., p. 4 of this report.*

J. JUNCTIONS - *See also section 5. of the Evaluation Report.*

Not applicable.

K. COMPARISON WITH PRIOR SURVEYS *See Section 6. of the Evaluation Report.*

This survey was compared with prior survey H-7953, dated 1952-53, surveyed at a scale of 1:10,000. For comparison, the survey was enlarged photographically to 1:5,000 scale.

The following observations were made:

- Prior survey H-7953 was completed before there was a marked channel in Wormley Creek and prior to dredging operations which created the existing navigable passages.

- Overall the average depth of Wormley Creek and West Branch was surveyed in 1988 as 2-3 ft. deeper outside of the channel. Depths surveyed in 1953 ranged from 0-3 ft. with intermittent deeps from 4-5 ft. in the creek. Depths surveyed in 1988 ranged from 0-5 ft. in the creek but outside of the navigable channel.

- A natural channel was surveyed in 1953 from 4-10 ft. near the entrance to the creek. However, this channel did not extent all the way out into the York River. Survey H-10275 shows a connecting channel navigable from the York River into Wormley Creek. It appears that the existing channel was dredged in or about 1966 along the same path as the natural channel.

This survey was compared to Survey BP-125333~~7~~⁸-34 CL 269 (1985), dated in 1984 at a scale of 1:5,000. Overall sounding agreement was good. Present survey soundings were consistently 1 ft. deeper than the prior survey soundings. This can be attributed to predicted tides which did not take into effect the extreme high tides (spring tides) experienced during the days of hydrography. *Concur.*

The following changes have occurred since Wormley Creek was last surveyed in 1984:

- Red daybeacon "2" has been changed to "2A" and buoys "2" and "5A" were added in February of 1988.

- Five privately maintained buoys marking the entrance to the Wormley Creek Marina have been added. They are listed in section L of this report.

- Two piles were surveyed in 1984 near lat. 37 12'50.0"N, long. 076 28'08.5"W, and lat. 37 12'48.5"N, long. 076 28'06.5"W. These piles were originally installed by Mr. Reiser, the marina owner at Wormley Creek, to mark the edge of the navigable channel at the east end of Wormley Creek near the marina. In 1987 both piles were removed by Mr. Reiser with a barge and crane and five privately maintained buoys were installed. For additional information, Mr. Reiser can be contacted at (804) 898-5060. *Concur. See also section 6. of the Evaluation Report.*

L. COMPARISON WITH THE CHART - *See section 7. of the Evaluation Report.*

A chart comparison was made with Chart 12241, 14th edition, dated 21 July 1984. Chart 12241 is at 1:20,000. For comparison, the chart was photographically enlarged to 1:5,000 scale.

The following significant changes were observed and charting recommendations made when comparing this survey to chart 12241:

-- Survey depths were consistently 1 ft. deeper than the charted depths for the survey area. This is most likely the result of using predicted tides for final field soundings (See Field Tide Note for details). The following charted soundings were more than 1 ft. shoal to survey soundings:

- A charted 3 ft. sounding near lat. 37 12'48"N, long. 076 28'05"W was surveyed at 7 ft. Maintenance dredging is performed in this area by Wormley Creek Marina. Recommend that the surveyed depth supersede the charted depth. *Concur.*

- A charted 3 ft. sounding near lat. 37 13'11"N, long. 076 28'02"W was surveyed at 6 ft. Recommend that the surveyed depth supersede the charted depth. *Concur.*

-- The aids to navigation for the entrance to Wormley Creek are not charted correctly. All daybeacons in Wormley Creek and West Branch were positioned in 1988 by 3rd order, Class I standards. Recommend that the new positions on all aids to navigation be charted.

-- Two additional aids to navigation have been added to Wormley Creek by the Milford Haven USCG ANT in February 1988. The following additions should be added to the chart:

- Red daybeacon "2" has been changed to "2A" and a new red nun buoy "2" has been placed between Wormley Creek Entrance Light #1 and red daybeacon "2A" (charted as red daybeacon "2").

- Green can "5A" has been added to aid navigation in the mouth of the creek.

- The charted shoal extending south from the point of land near lat. 37 12'53"N, long. 076 28'08"W does not exist as charted. This area was dredged circa 1966 during the original dredging operation by the US Army Corp of Engineers which established the existing channels. Additional dredging has taken place since then under a maintenance dredging contract held by the owner of the Wormley Creek Marina (Mr. Reiser). A private aid (green can #1) has been placed on the south west end of the existing shoal to help boaters navigate towards the marina. Recommend removing shoal as charted and replacing with surveyed depths. *Concur.*

- Five private aids to navigation have been added to improve navigation in the area of Wormley Creek Marina. They were established by Mr. Reiser under a permit with the US Army Corp of Engineers in 1987 (A copy of the permit is included with this survey in the accordion folder). The following additions have been made:

See letter from MOA 23 to Office to Aids to Navigation, 5th C.G. District.

Buoy	Location	Position #
R #4	37 12' 50.42"N 076 28' 06.20"W	194
R #6	37 12' 48.85"N 076 28' 04.78"W	195
R #8	37 12' 46.98"N 076 28' 03.44"W	196
G #1	37 12' 52.20"N 076 28' 07.85"W	353
R #2	37 12' 51.08"N 076 28' 08.71"W	354

The hydrographer recommends that a dashed channel line extending SE from the main channel should be added to the chart to denote the navigable channel marked by the above buoys to the marina on the east side of the creek.

- The charted note "5 ft. centerline 1977" should be removed and a new controlling depth recommended from the 1988 surveyed depths. Survey depths were obtained during abnormally high tides (spring tides) which could not be accounted for by using predicted tides. For this reason the hydrographer can not make a recommendation for the controlling depth based on final field soundings. Since the channel is narrow and winding the hydrographer does recommend that a note "Local knowledge advised" be amended to the controlling depth that will be charted. - *Concur. See also section 7.b. of the Evaluation Report.*

- The notes "shl rep 1983" at lat. 37 12'52"N, long 076 28'40"W and lat. 37 13'03"N, long 076 28'03"W are unwarranted and should be removed from the chart. No shoals was surveyed in either location. *See also section 7.b. of the Evaluation Report.*

This survey was compared to chart 12238, 27th edition, dated 2 June 1984 at a scale of 1:40,000. The following observations were made:

1) The aids to navigation marking the entrance to Wormley Creek are not charted correctly. The same corrections apply that were recommended for chart 12241. - *See section 7.c. of the Evaluation Report.*

2) The note "2 1/2 ft. centerline 1983" is not valid and should be removed from the chart. A recommended controlling depth derived from smooth plotting survey H-10275 soundings should be noted on the chart. *Show on chart 12238 (27th Ed., June 2/84) - Concur.*

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede all prior surveys for charting.

N. AIDS TO NAVIGATION

All aids to navigation were compared with the latest edition of the Light List (Vol. II, 1988). Positions and descriptions appearing in the Light List were complete and accurate with the following exceptions:

- 1) Wormley Creek, red daybeacon "2" has been changed to "2A".
- 2) Wormley Creek, red nun buoy "2" and green can buoy "5A" were added by the Milford Haven USCG ANT in February 1988.

All fixed aids to navigation were located with third order, Class I standards. All floating aids to navigation were positioned with FALCON Mini-ranger rates.

O. STATISTICS

Type of Production	LAUNCH 0517
=====	
Days of Production (Days at Sea)	2
Number of Positions	369
Nautical Miles of Sounding Line	10.2
Nautical Miles of Crossline	1.3
Nautical Miles of Development	0
Total Miles of Hydrography	11.5
Number of Detached Positions	24
Number of Bottom Samples	9
Number of Bar Checks	4
Number of TDC Cast	0
Number of Nansen Casts	0
Number of AWOIS Investigations	0

P. MISCELLANEOUS

This survey was conducted at twice the recommended line spacing for a 1:5,000 scale survey in order to more adequately define all possible shoals.

A Notice To Mariners was submitted by N/CG2 prior to the completion of this survey based on 1984 survey information. The notice was initiated to help clarify changes to the aids at the entrance to Wormley Creek and to stress the need for local knowledge. A copy of the Notice To Mariners is appended.

Bottom samples were submitted to the Curator, Dept. of Paleobiology, Natural History Museum, Smithsonian Institution.

No anomalous currents were observed in the survey area.

Q. RECOMMENDATIONS

Specific recommendations were made in section L of this report.

R. AUTOMATED DATA PROCESSING

Programs used during field data acquisition and field processing of this survey are as follows:

PROGRAM	DESCRIPTION	VERSION DATE
RK112	R/R and Hyperbolic Real Time Hydroplot	01/15/87
RK201	Grid, Signal, and Lattice Plot	04/18/75
RK211	Range/Range Non-Real Time Plot	03/22/84
RK212	Visual Station Table Load	04/01/74
RK216	Range/Azimuth Non-Real Time Plot	02/24/84
RK300	Utility Computations	02/05/76
RK330	Reformat and Data Check	10/21/80
RA362	RK330 and AM602 combined	08/20/84
RK407	Geodetic Inverse/Direct Computation	09/25/78
AM500	Predicted Tide Generator	11/10/72
AM602	ELINDRE - Line Oriented Editor	12/08/82

S. REFERENCE TO REPORTS

The Horizontal Control Report for E244-HFP, Wormley Creek, Virginia will be submitted by N/MOA222.

A User Evaluation and a Coast Pilot Report are appended to the Descriptive Report.

Submitted by,

Elizabeth A. Lake, LTJG NOAA
OIC, HFP-3

SIGNAL TAPE LISTING

WORMLEY CREEK, VA.

OPR-E244

101	6	37	13	34406	076	28	35047	250	0000	000000	FUEL 1988
102	4	37	13	11889	076	27	58229	139	0000	000000	WORMLEY CK ENT LT 1
103	3	37	13	04094	076	28	02689	139	0000	000000	WORMLEY CK DAYBCN 2A
104	3	37	12	59209	076	28	06722	139	0000	000000	WORMLEY CK DAYBCN 4
105	3	37	12	53130	076	28	12063	250	0000	000000	WORM 1988
106	6	37	12	50277	076	28	13035	250	0000	000000	DOBSON 1984
107	4	37	12	52926	076	28	08511	139	0000	000000	WORMLEY CK DAYBCN 5
108	4	37	12	50570	076	28	13520	139	0000	000000	WORMLEY CK DAYBCN 7
109	0	37	12	51483	076	28	16502	139	0000	000000	WORMLEY CK DAYBCN 8
110	0	37	12	51203	076	28	18258	139	0000	000000	WORMLEY CK DAYBCN 10
111	7	37	12	47083	076	28	20333	139	0000	000000	WORMLEY CK DAYBCN 11
112	6	37	12	47378	076	28	27142	139	0000	000000	WORMLEY CK DAYBCN 13
113	1	37	12	52202	076	28	34593	139	0000	000000	WORMLEY CK DAYBCN 14
114	6	37	12	49836	076	28	36532	250	0000	000000	WM-01 1988
115	6	37	12	51443	076	28	50583	139	0000	000000	WORMLEY CK DAYBCN 15

Note: All signals listed were located to Third Order, Class I standards in the year shown, by personnel from the Atlantic Marine Center and/or HFP-3.

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION									
NONFLOATING AIDS OR LANDMARKS FOR CHARTS									
NOAA FORM 76-40 (8-74) Replaces C&GS Form 567.		REPORTING UNIT (Field Party, Ship or Office)		LOCALITY		DATE		ORIGINATING ACTIVITY	
<input checked="" type="checkbox"/> TO BE CHARTED <input type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED		HFP-3		VIRGINIA		6/03/88		<input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> COMPILATION ACTIVITY <input type="checkbox"/> FINAL REVIEWER <input type="checkbox"/> QUALITY CONTROL & REVIEW GRP. <input type="checkbox"/> COAST PILOT BRANCH (See reverse for responsible personnel)	
OPR PROJECT NO. E-244		JOB NUMBER		SURVEY NUMBER		DATUM		METHOD AND DATE OF LOCATION (See instructions on reverse side)	
						NORTH AMERICAN 1983			
CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION		LONGITUDE	OFFICE	FIELD	AFFECTED CHARTS		
		LATITUDE	LONGITUDE						
		° / ' "	° / ' "	"					
		D.M. Meters	D.P. Meters	D.P. Meters					
LIGHT	* YORK RIVER WORMLEY CREEK ENTRANCE LIGHT #1	37 13 11.889	076 27 58.229			F-3-6-L 05/88	#12241		
DAYBCN	* YORK RIVER WORMLEY CREEK DAYBCN #2A	37 13 04.094	076 28 02.689			F-3-6-L 05/88	#12241		
DAYBCN	* YORK RIVER WORMLEY CREEK DAYBCN #4	37 12 59.029	076 28 06.722			F-3-6-L 05/88	#12241		
DAYBCN	* YORK RIVER WORMLEY CREEK DAYBCN #5	37 12 52.926	076 28 08.511			F-3-6-L 05/88	#12241		
DAYBCN	* WESTERN BRANCH WORMLEY CREEK DAYBCN #7	37 12 50.570	076 28 13.520			F-3-6-L 05/88	#12241		
DAYBCN	* WESTERN BRANCH WORMLEY CREEK DAYBCN #8	37 12 51.483	076 28 16.502			F-3-6-L 05/88	#12241		
DAYBCN	* WESTERN BRANCH WORMLEY CREEK DAYBCN #10	37 12 51.203	076 28 18.258			F-3-6-L 05/88	#12241		
DAYBCN	* WESTERN BRANCH WORMLEY CREEK DAYBCN #11	37 12 47.083	076 28 20.333			F-3-6-L 05/88	#12241		
DAYBCN	* WESTERN BRANCH WORMLEY CREEK DAYBCN #13	37 12 47.378	076 28 27.142			F-3-6-L 05/88	#12241		
	* Positions shown are from unadjusted field calculations.								

L-708(88)

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

- HYDROGRAPHIC PARTY
 - GEODETIC PARTY
 - PHOTO FIELD PARTY
 - COMPILATION ACTIVITY
 - FINAL REVIEWER
 - QUALITY CONTROL & REVIEW GRP.
 - COAST PILOT BRANCH
- (See reverse for responsible personnel)

REPORTING UNIT
(Field Party, Ship or Office)

HFP-3

STATE

VIRGINIA

LOCALITY

WORMLEY CREEK

DATE

6/03/88

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

OPR PROJECT NO.

E-244

DATUM

NORTH AMERICAN 1983

CHARTING NAME

DESCRIPTION
(Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parentheses)

WESTERN BRANCH ~~CREEK~~ **CHANNEL**
* WORMLEY ~~CREEK~~ DAYBCN #14

WESTERN BRANCH ~~CREEK~~ **CHANNEL**
* WORMLEY ~~CREEK~~ DAYBCN #15

* Positions shown are from unadjusted field calculations.

METHOD AND DATE OF LOCATION
(See instructions on reverse side)

OFFICE

F-3-6-L

05/88

FIELD

F-3-6-L

05/88

CHARTS AFFECTED

#12241

#12241

LATITUDE

37 1252.202076

LONGITUDE

28 84.593

D.M. Meters

37 1251.443076

D.P. Meters

28 50.583

L-708(88)



**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NATIONAL OCEAN SERVICE
Atlantic Marine Center
439 West York Street
Norfolk, VA 23510-1114

June 14, 1988

TO: N/CG243 - George H. Mastrogiannis
FROM: N/MOA233 - ^{For} LTJG Beth Lake *[Signature]*
OIC, Hydro Field Party 3
THRU: N/MOA233 - LCDR David A. Waltz
Chief, Hydro Field Parties Section
SUBJECT: User Evaluation

A user evaluation was performed to determine if the NOAA products fulfill the requirements of its users.

The information was solicited from interviews with local chart distributors, recreational boaters, local marina owners, member of the U.S.P.S., and officials from the USCG RTC in Yorktown, Virginia, and the ANT section in Milford Haven, Virginia.

The overall response to charts 12241, and 12238 was favorable. However, locals in the vicinity of Wormley Creek were aware of some chart discrepancies which needed to be corrected.

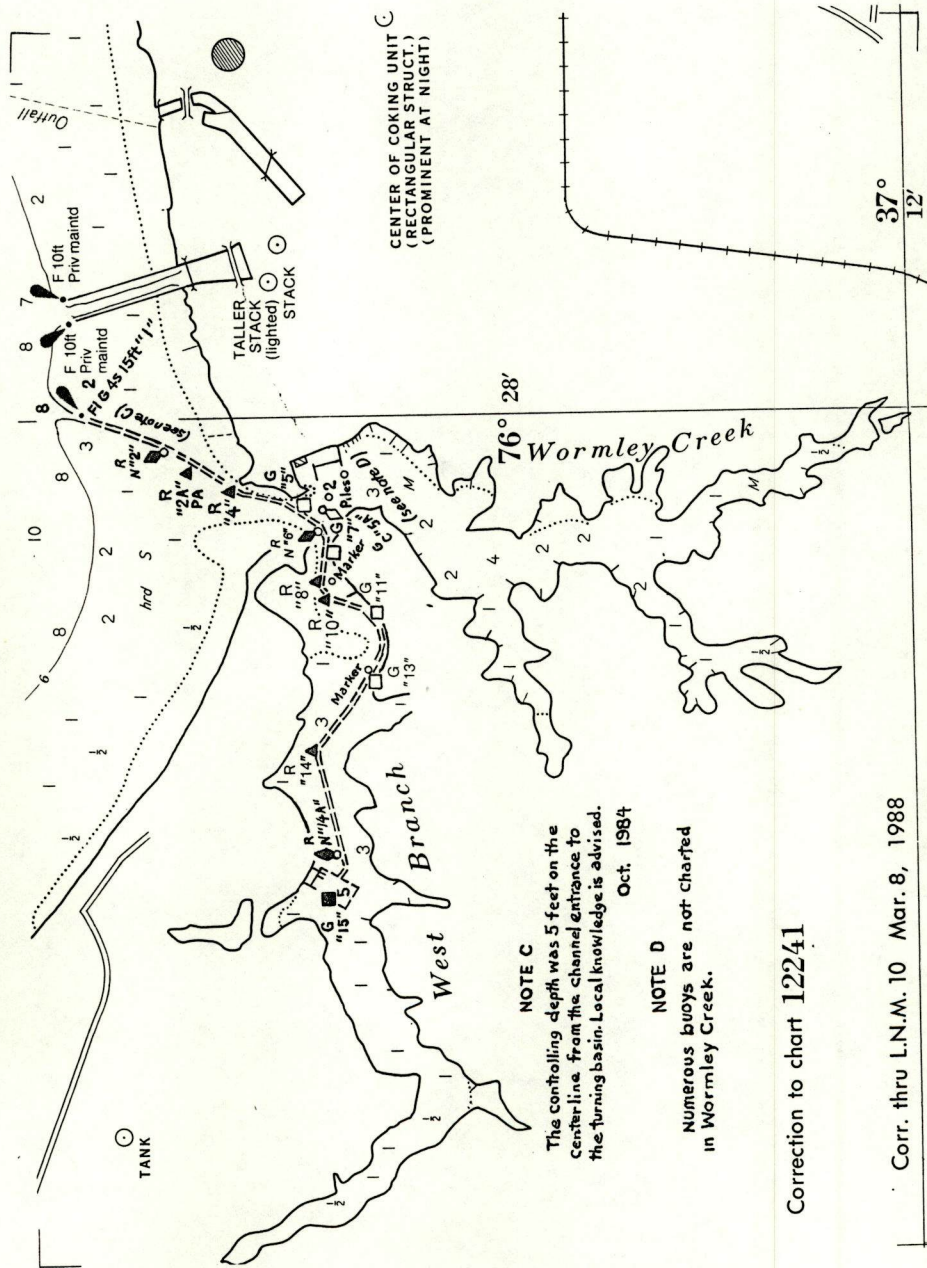
BMCS Vita at the USCG RTC operates a fleet of 41 and 31 foot cutters drawing 4'1" from the small boat facility at the western end of West Branch. He explained that the cutters navigate the channel several times a day with no trouble using local knowledge. He was aware that the positioning of the entrance light was not charted correctly; however, he explained that charts are rarely used in an area as small as Wormley Creek.

According to interviews with Mr. Reiser, the Wormley Creek Marina owner, the charted centerline on chart 12238 is greatly in error. He claims that there is 6 feet to be found in the channel with knowledge of where to navigate.

The purchasing agent at the local chart dealer (Yorktown Raven Marine Corp.) commented that none of her buyers had expressed any dissatisfaction with the charts. She mentioned that chart 12241 was not a big seller due to the fact that locals tend to use local knowledge in small areas such as Wormley Creek.

Interviews with local boaters revealed that most of them had bumped bottom once or twice when entering the channel before buoy "2" was put in. The channel had to be navigated using knowledge of the bend in the channel before it was sufficiently marked in February of this year.





NOTE C

The controlling depth was 5 feet on the center line from the channel entrance to the turning basin. Local knowledge is advised. Oct. 1964

NOTE D

Numerous buoys are not charted in Wormley Creek.

Correction to chart 12241

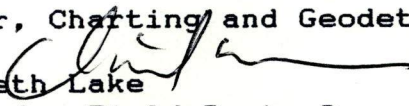
Corr. thru L.N.M. 10 Mar. 8, 1988



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Atlantic Marine Center
439 West York Street
Norfolk, VA 23510-1114

14 June 1988

TO: N/CG223 - Director, Charting and Geodetic Services
FROM: N/MOA233 - ^{for} LTJG Beth Lake 
OIC, Hydro Field Party 3
THRU: N/MOA233 - LCDR David A. Waltz
Chief, Hydrographic Field Parties Section
SUBJECT: Coast Pilot Report

The information contained in the latest edition of Coast Pilot 3, 1988 is accurate and complete with the following exception:

Page 141, Line 60: The note "5 ft. centerline 1984" should be updated based on hydrographic information obtained during Survey H-10275. A controlling depth cannot be recommended at this time, however, based on field reduction of soundings. A controlling depth recommendation can only be made after smooth plotting of data at the Atlantic Marine Center using actual tides to reduce soundings.



APPROVAL SHEET

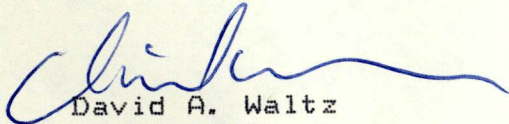
FOR

H-10259

The hydrographic records transmitted with this survey are complete and adequate to supersede prior surveys for charting with no additional field work recommended.

No direct supervision was given by me during the field work.

Approved and forwarded.



David A. Waltz
LCDR, NOAA
Chief, Hydrographic Field Parties Section

REFERENCE NO.

MOA23-80-88

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 Branch, N/CG243
 Room 151, WSC-1
 National Ocean Service
 Rockville, MD 20852

DATE FORWARDED

29 July 1988

NUMBER OF PACKAGES

one (1)

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-10275 (HFP-5-1-88)
OPR-E244-Virginia, York River, Wormley Creek

- Pkg #1 (tube):
- ✓ Smooth sheet
 - ✓ Position overlay
 - ✓ Excess overlays (levels 1, 2, & 3/3)
 - ✓ Final field sheet (4 mylar sheets)
 - ✓ Original Descriptive Report

FROM: (Signature)

Robert G. Roberson
 Robert G. Roberson

RECEIVED THE ABOVE
(Name, Division, Date)

D. S. Clark
Aug. 15, 1988

Return receipted copy to:

Chief, Hydrographic Surveys Branch,
 N/MOA23
 Atlantic Marine Center
 439 W. York Street
 Norfolk, VA 23510-1114

07/29/88

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H-10275

NUMBER OF CONTROL STATIONS

3

NUMBER OF POSITIONS

369

NUMBER OF SOUNDINGS

1558

	TIME-HOURS	DATE COMPLETED
* PREPROCESSING EXAMINATION	12	06/21/88
VERIFICATION OF FIELD DATA	67	07/23/88
QUALITY CONTROL CHECKS	24	
EVALUATION AND ANALYSIS	31	07/29/88
FINAL INSPECTION	5	07/28/88
TOTAL TIME	127	
MARINE CENTER APPROVAL		07/29/88

* Preverification time is not considered as part of total survey time.

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: June 28, 1988

MARINE CENTER: Atlantic

OPR: E244

HYDROGRAPHIC SHEET: H-10275

LOCALITY: Wormley Creek, Virginia

TIME PERIOD: June 1 - 10, 1988

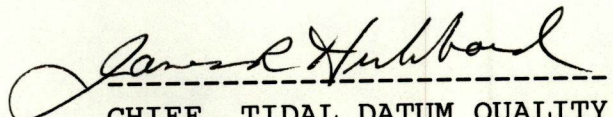
TIDE STATION(S) USED: 863-7728 Wormley Creek, VA

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 4.22 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.5 ft.

REMARKS: RECOMMENDED ZONING

1. Zone Direct



CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

GEOGRAPHIC NAMES

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST			
VIRGINIA	X									1	
WEST BRANCH	X									2	
WORMLEY CREEK	X									3	
YORK RIVER	X									4	
										5	
										6	
										7	
										8	
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										25	

ATLANTIC MARINE CENTER
EVALUATION REPORT

SURVEY NO.: H-10275

FIELD NO.: HFP-5-1-88

Virginia, York River, Wormley Creek

SURVEYED: 23 May through 10 June 1988

SCALE: 1:5,000

PROJECT NO.: OPR-E244-HFP

SOUNDINGS: RAYTHEON DE-719C Fathometer, Sounding Pole

CONTROL: MOTOROLA Falcon 484 Mini-Ranger/NIKON NT2D-20"
Theodolite (Range/Azimuth)

Chief of Party..... D. A. Waltz

Surveyed by..... E. A. Lake
..... M. J. McMann
..... J. P. Oswald
..... D. B. Elliott

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

1. INTRODUCTION

a. No unusual problems were encountered during office processing.

b. A page size 1:2,500 enlargement of the approach to Wormley Creek has been inserted into the Evaluation Report. The enlargement was placed into the report to show in greater detail the entrance channel and approach to Wormley Creek. The 1:2,500 scale plot is not to be considered as the final product of the survey work because it does not meet National Ocean Service (NOS) standards for a survey of its scale.

c. All geographic positions printed in this report are referenced to the North American Datum of 1983 (NAD 83).

d. 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.

b. Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). 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 1927 (NAD 27). To place this survey on the NAD 27 datum move the projection lines 0.552 seconds (16.1 meters or 3.22mm at the scale of the survey) north in latitude, and 1.179 seconds (29.1 meters or 5.82 mm at the scale of the survey) east in longitude.

c. Shoreline originates with T-8316 of 1942-44 supplemented by BP 119260 of 1982 (NANCI source data). Piers and alongshore features located by the field unit are shown in red in the present survey.

Application of the charted shoreline to the sounding overlay was attempted during office processing. Transfer could not be made because of scale distortion caused by enlargement to survey scale. Surveyed positions of piers and alongshore features could not be brought into coincidence with the charted shoreline because of the apparent scale distortion. As a result, no shoreline was applied to the present survey.

The compiler will have to fit as best possible the charted shoreline surveyed data to the presently surveyed hydrography during chart compilation.

New shoreline mapping of the area is recommended.

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 depth curves could not be drawn in their entirety; the zero (0) curve was not delineated because of proximity to the shoreline. The supplemental three (3) foot curve was drawn to show additional bottom relief.

c. The development of the bottom configuration and determination of least depths is considered adequate.

4. CONDITION OF SURVEY

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

5. JUNCTIONS

There are no junctional surveys in the common area. The charted hydrography is in harmony with present survey soundings in the junctional area.

6. COMPARISON WITH PRIOR SURVEYS

BP 125333 1:5,000 (1984)
H-7953 1:10,000 (1952-53)

The prior surveys listed above cover the present survey area in its entirety.

A comparison between H-7953 (1952-53) and the present and prior survey outside of Wormley Creek shows survey depths vary plus or minus (+/-) one (1) foot in the common area. The following should be noted:

1) A natural channel that extended from approximate Latitude 37°12'55"N, Longitude 76°28'08.5"W to Latitude 37°13'00.5"N, Longitude 76°28'06"W with depths ranging from 7 to 10 feet falls in present survey depths of 1 to 7 feet.

2) The present channel leading into Wormley Creek is located immediately to the east of the previously discussed channel. The channel shown on the present survey falls in prior survey depths of 3 to 5 feet. At the east side of the mouth of the creek the present survey appears to encroach on the prior survey shoreline. The western shoreline at the entrance to Wormley Creek appears to have accreted approximately 25 meters.

3) A channel running from approximate Latitude 37°13'28"N, Longitude 76°27'52"W to Latitude 37°13'14"N, Longitude 76°27'47"W has a controlling depth of 13 feet; the channel depths range from 13 to 20 feet. Prior survey depths in this area range from 7 to 13 feet.

Inside of the entrance to Wormley Creek and West Branch the following should be noted:

5) A channel in West Branch with a controlling depth of 4 feet extends to approximate Latitude 37°28'53"W. This channel leads to the U. S. Coast Guard Reserve Training Center, Yorktown, Virginia. Prior survey depths in the vicinity of the channel range from 1 to 7 feet.

6) In Wormley Creek in the vicinity of Latitude 37°12'51"N, Longitude 76°28'04.5"W a marina has been constructed. A channel leading to the marina has a controlling depth of 5 feet and is marked by private aids to navigation. Prior survey depths in the vicinity of the marina and the channel range from awash at MLW to 3 feet.

A comparison between BP 125333 of 1984 (Chart Letter 269 of 1985, CL269/85), a Chart Evaluation Survey (CES) of chart 12241, and the present survey shows a favorable comparison. The prior survey was conducted to determine the controlling depth into Wormley Creek and West Branch after shoaling had

been reported. The shoaling notes originated with Chart Letter 391 of 1984 (CL391/84). The following should be noted:

Two (2) piles shown on the prior survey in Latitude 37°12'50.6"N, Longitude 76°28'07.7"W and Latitude 37°12'48.3"N, Longitude 76°28'05.1"W are adequately addressed in section K. of the hydrographer's report.

The present survey is considered adequate to supersede the above prior surveys within the common area.

7. COMPARISON WITH CHART 12238 (27th Edition, June 2/84)
12241 (14th Edition, July 21/84)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys. The following should be noted:

1) The charted pier ruins in the vicinity of Latitude 37°12'48.3"N, Longitude 76°28'03.1"W were not found by the field unit. A pier is shown on the present survey in the same location. It is recommended that the pier ruins be deleted, and the pier be charted as shown on the present survey.

2) A charted pier in the vicinity of Latitude 37°12'48"N, Longitude 76°28'02"W is depicted as being approximately 10 meters longer on the present survey. It is recommended that the pier be revised as shown on the present survey.

3) The following four (4) charted piers were not located or discussed by the hydrographer:

<u>Latitude (N)</u>	<u>Longitude (W)</u>
37°12'48.0"	76°28'03.0"
37°12'47.5"	76°28'02.5"
37°12'47.2"	76°28'02.2"
37°12'46.3"	76°28'01.3" ✓

It is recommended that the piers be revised to submerged pier ruins in their presently charted locations.

The present survey is adequate to supersede the charted hydrography in the common area.

b. Controlling Depths

The charted note "Shl rep 1983" shown in the vicinity of Latitude 37°13'02"N, Longitude 76°28'02"W is not applicable to the charted channel. A controlling depth of 5 feet is carried to the mouth of Wormley Creek and into Wormley Creek. A controlling depth of 5 feet can be carried to Longitude

76°28'15"W in West Branch. West of Longitude 76°28'15"W the controlling depth becomes 4 feet. It is recommended that the note "5 FT CENTERLINE 1977" outside of the creek be revised to "5 FT CENTERLINE 1988". In West Branch the "Shl rep 1983" note should be removed from the chart, and the "5 FT CENTERLINE 1977" should be revised to "4 FT CENTERLINE 1988". ✓ HR

c. Aids to Navigation

The hydrographer located eleven (11) fixed and nine (9) floating aids to navigation in the survey area. These aids appear adequate to serve their intended purpose with the following exceptions:

1) In the vicinity of Wormley Creek Daybeacon 2A (U. S. Coast Guard, Volume II, Light List # 12335) there is some encroachment on the channel; however, a controlling depth of 5 feet is still carried.

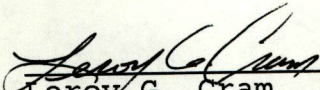
2) In the vicinity of Wormley Creek Marina buoys "1", "2", and "4" (U. S. Coast Guard, Volume II, Light List # 12350, 12355, and 12360, respectively), shoaling is apparent into of the marked safe water. A letter was generated and forwarded to the Office of Aids to Navigation, Fifth Coast Guard District noting this situation during the preprocessing phase of office processing.


8. COMPLIANCE WITH INSTRUCTIONS

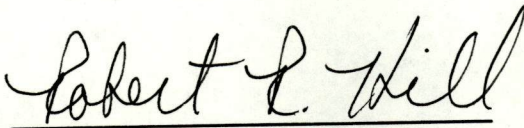
This survey complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is a good basic survey. No additional field work is recommended.


Leroy G. Cram
Supervisory Cartographic
Technician
Verification of Field Data

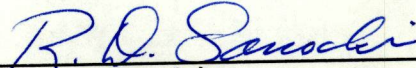

Robert G. Roberson
Supervisory Cartographer
Evaluation and Analysis


Robert R. Hill
Senior Cartographic Technician
Verification Check

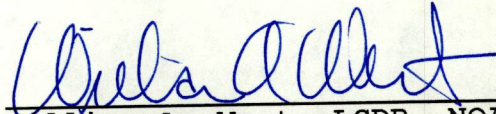
INSPECTION REPORT
H-10275

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof 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 complies with National Ocean Service requirements except as noted in the Evaluation Report. The survey records comply with NOS requirements except where noted in the Evaluation Report.

Inspected

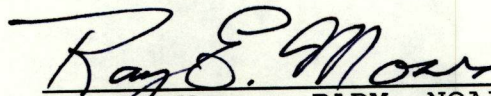


R. D. Sanocki
Chief, Hydrographic Surveys
Processing Section
Hydrographic Surveys Branch

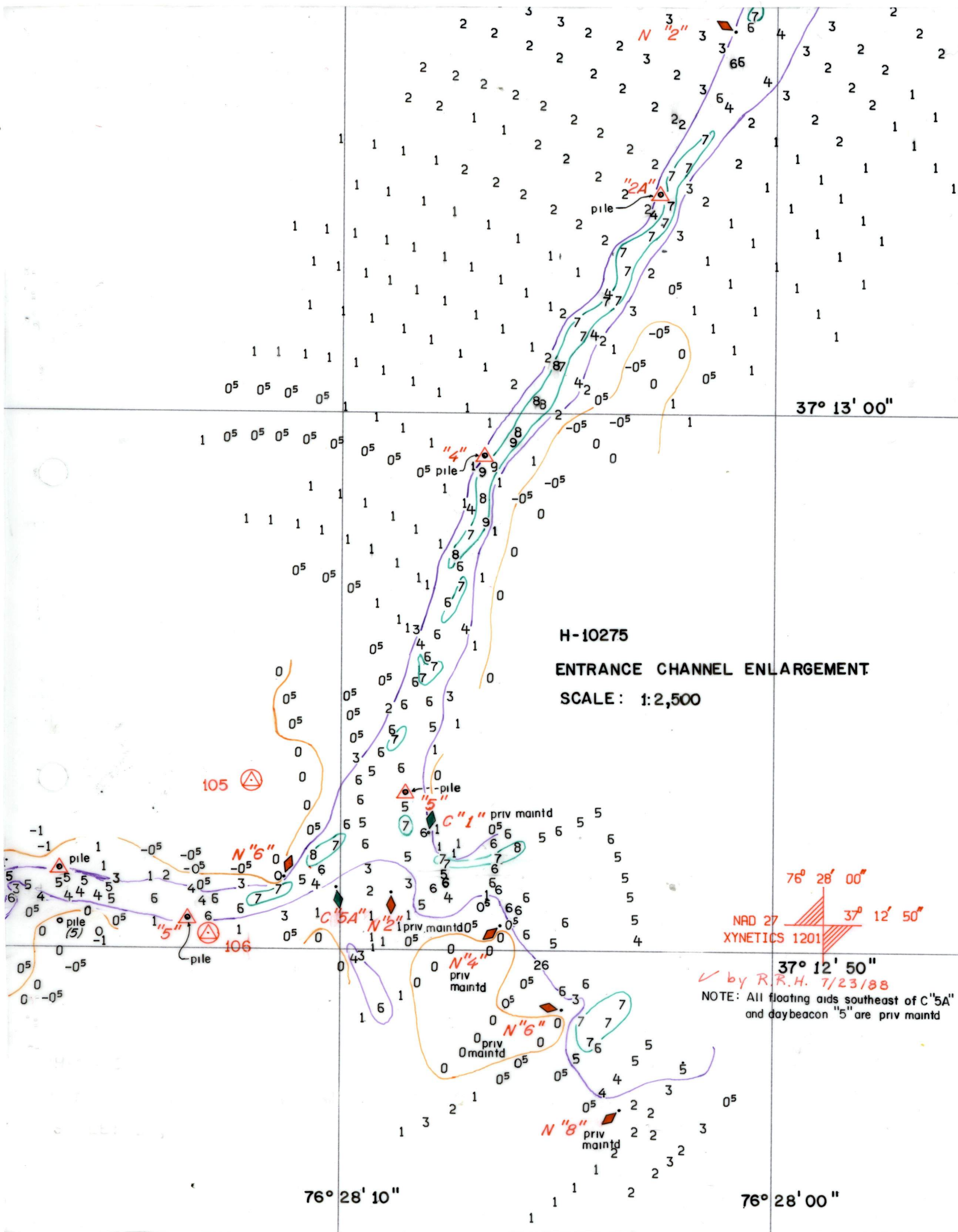


William A. Wert, LCDR, NOAA
Chief, Hydrographic Surveys Branch

Approved: 29 July 1988



Ray E. Moses, RADM, NOAA
Director, Atlantic Marine Center



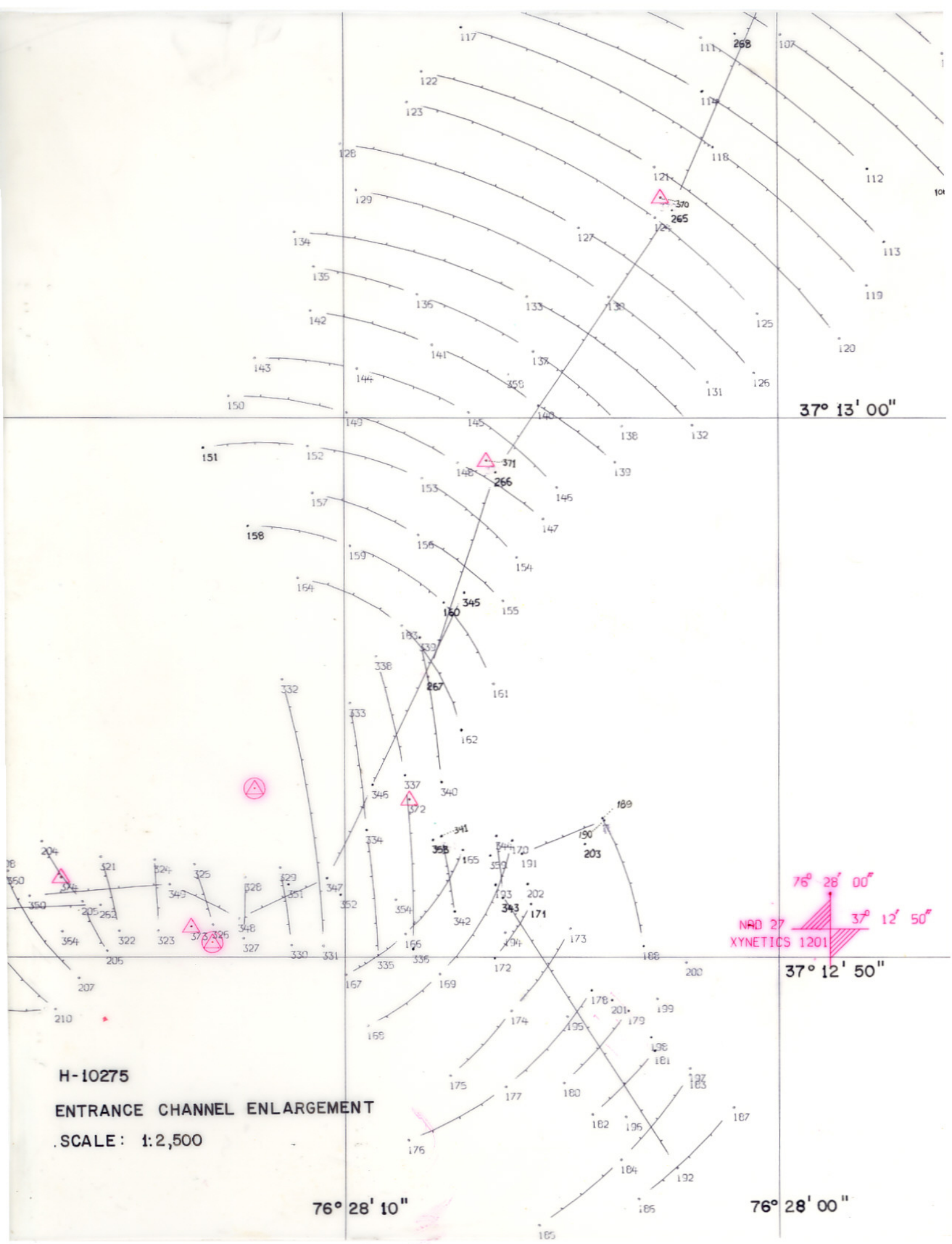
H-10275
 ENTRANCE CHANNEL ENLARGEMENT
 SCALE: 1:2,500

76° 28' 00"
 NAD 27
 XYNETICS 1201
 37° 12' 50"

✓ by R.R.H. 7/23/88
 NOTE: All floating aids southeast of C "5A" and daybeacon "5" are priv maintd

76° 28' 10"

76° 28' 00"



H-10275

ENTRANCE CHANNEL ENLARGEMENT

SCALE: 1:2,500

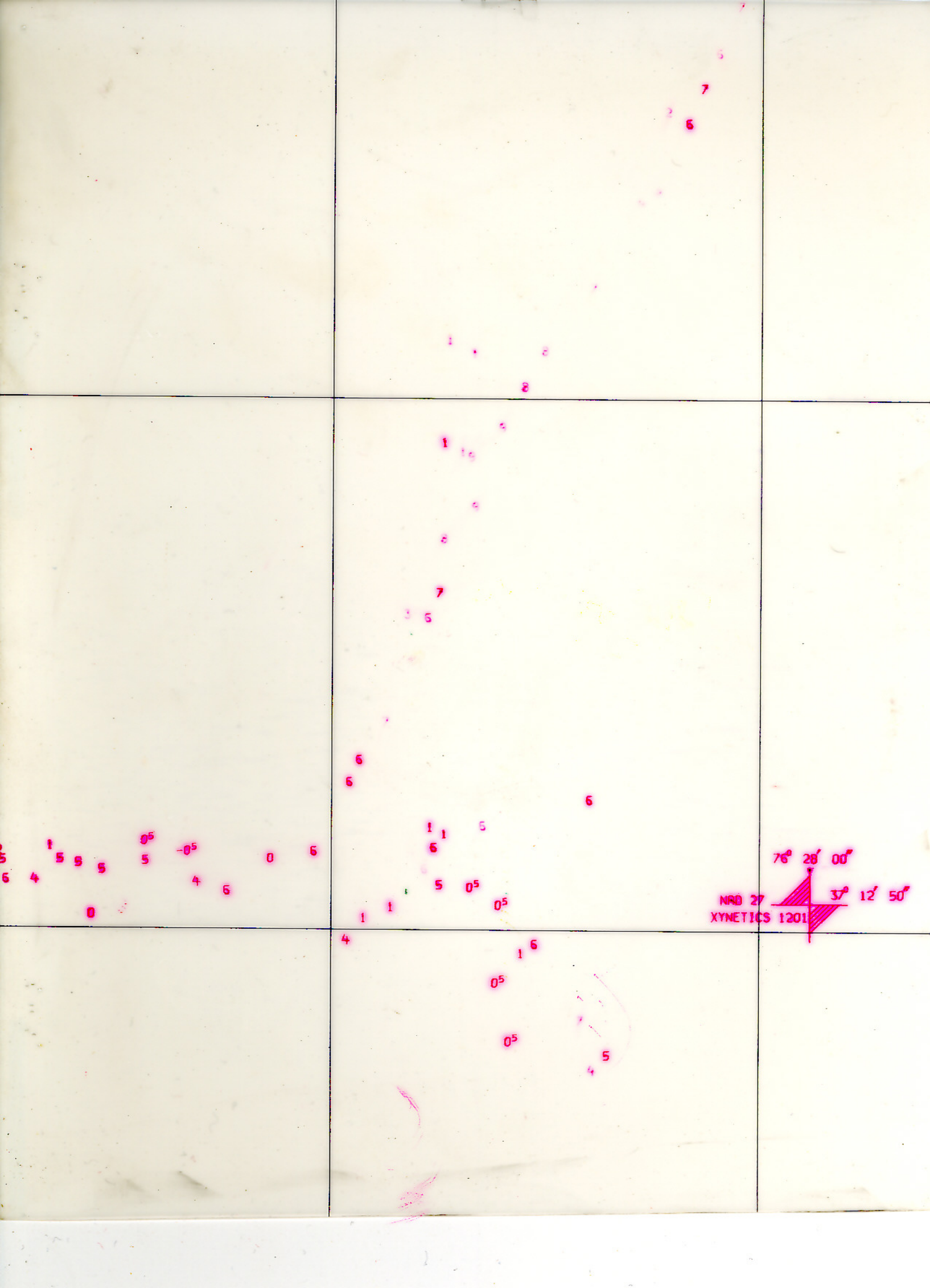
37° 13' 00"

76° 28' 00"
37° 12' 50"
NAD 27
XYNETICS 1201

37° 12' 50"

76° 28' 10"

76° 28' 00"



7

8

8

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7

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3^b

7
6
6

5^b

76° 28' 00"

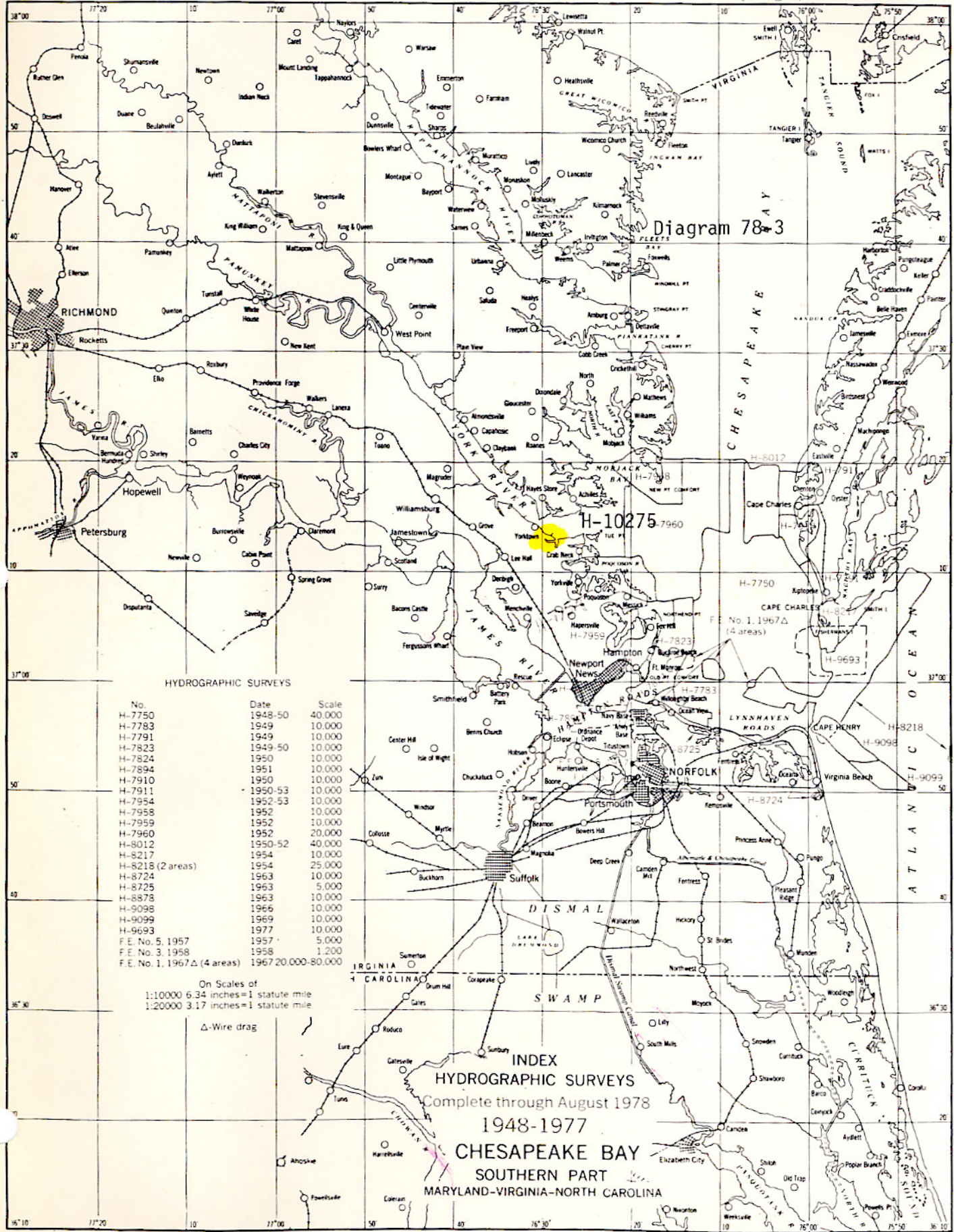
37° 12' 50"

NAD 27
XYNETICS 1201

2^b

DEPARTMENT OF COMMERCE
 National Oceanic and Atmospheric Administration
 National Ocean Survey
 Rockville, Maryland

Hydrographic Index No. 70 M



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-7750	1948-50	40,000
H-7783	1949	10,000
H-7791	1949	10,000
H-7823	1949-50	10,000
H-7824	1950	10,000
H-7894	1951	10,000
H-7910	1950	10,000
H-7911	1950-53	10,000
H-7954	1952-53	10,000
H-7958	1952	10,000
H-7959	1952	10,000
H-7960	1952	20,000
H-8012	1950-52	40,000
H-8217	1954	10,000
H-8218 (2 areas)	1954	25,000
H-8724	1963	10,000
H-8725	1963	5,000
H-8878	1963	10,000
H-9098	1966	10,000
H-9099	1969	10,000
H-9693	1977	10,000
F.E. No. 5, 1957	1957	5,000
F.E. No. 3, 1958	1958	1,200
F.E. No. 1, 1967Δ (4 areas)	1967	20,000-80,000

On Scales of
 1:10000 6.34 inches = 1 statute mile
 1:20000 3.17 inches = 1 statute mile

Δ-Wire drag

INDEX
 HYDROGRAPHIC SURVEYS
 Complete through August 1978
 1948-1977
 CHESAPEAKE BAY
 SOUTHERN PART
 MARYLAND-VIRGINIA-NORTH CAROLINA

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10275

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
<i>12241</i>	<i>8-17-88</i>	<i>H. Radden</i>	Full part before After Marine Center Approval Signed Via
			Drawing No. <i>31</i>
<i>12238</i>	<i>8-19-88</i>	<i>H. Radden</i>	Full part before After Marine Center Approval Signed Via
			Drawing No. <i>40</i>
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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