FE336

Diagram No. 1222-4

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey ... Field Examination

Field No. ... AHS-5-1-89

Registery No. ... FE-336

LOCALITY

State ... Virginia

General Locality ... Elizabeth River

Sublocality ... Town Point

19 89

CHIEF OF PARTY
CDR C.B. Lawrence

LIBRARY & ARCHIVES

DATE ... April 3, 1990

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

FE336

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

FE-336

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.

AHS-5-1-89

State Virginia

General locality Elizabeth River

Locality Town Point

Scale 1:5,000 Date of survey Sept. 18 - Oct. 24, 1989

Instructions dated Sept. 7, 1989 Project No. S-E201-AHS

Vessel Launch 1021 (VESNO 2223)

Chief of party Commander Christopher B. Lawrence, NOAA, RICHARD WHITFIELD, ROBERT SNOW

Surveyed by Lieutenant David W. Moeller, NOAA

Soundings taken by echo sounder, hand lead, ~~pole~~ DSF-6000N S/N B054N & Leadline

Graphic record scaled by Lieutenant David W. Moeller, NOAA

Graphic record checked by Lieutenant David W. Moeller, NOAA

Protracted by _____ Automated plot by ~~Dan R. Munford~~ XYNETICS 1201 PLOTTER (AHS)

Verification by ATLANTIC HYDROGRAPHIC SECTION PERSONNEL

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW corrected using unverified smooth tides

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

AWOIS and SURF check 4/16/90 MCR

DBMS 4-20-90 KWW

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

☆ U.S. G.P.O. 1972-769-565/519 REG.#6

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY
FE-336
AHS-5-1-89

Scale: 1:5000
Chief of Party: CDR Christopher B. Lawrence, NOAA
Hydrographer in Charge: LT David W. Moeller, NOAA
Atlantic Hydrographic Section
Launch 1021

A. PROJECT

This survey was conducted under Project Instructions S-E201-AHS, Item Investigation, Town Point, Elizabeth River, Virginia, dated September 7, 1989. No sheet letter was assigned.

The purpose of this survey is to provide Nautical Charting with contemporary data and to investigate the reported grounding of a vessel in the Otter Berth at Waterside in Norfolk, Virginia.

B. AREA SURVEYED

The area surveyed consisted of the approaches to the Otter Berth, the marina and berthing areas of Waterside, and the area of Freemason Harbor. The area was surveyed at a scale of 1:5000 and was plotted at a scale of 1:1200 for clarity of presentation. The survey was conducted on September 18, 19, & October 24, 1989 (DN 261, 262, & 297).

C. SOUNDING VESSEL

Soundings for DN 261 and 262 were obtained using Jensen launch 1021 (VESNO 2223). Soundings on DN 297 were obtained from the pier face using a lead line. No unusual sounding configurations were used nor were any sounding problems encountered.

D. SOUNDING EQUIPMENT AND CORRECTION TO ECHO SOUNDINGS

Soundings on DN 261 and 262 were obtained using a Raytheon DSF-6000N Fathometer S/N B054N. The Fathometer was operated in manual mode at all times. No bar checks were taken due to no bar being available at AMC. A velocity cast using TDC S/N 130 located at approximately 36°56'30"N 076°17'30"W was conducted on DN 261. Velocity correctors were determined using NOS program VELOCITY. Settlement and squat correctors were not determined, however, all

hydrography was run at idle speed to minimize the effect of settlement and squat on the data. Historical draft of 1.6 feet was applied to all soundings.

Soundings along the marina pier face were obtained using a lead line on DN 297.

All data was plotted using smooth tidal correctors obtained from Atlantic Operations Group (N/OMA1213) from the gage located at the Portsmouth Naval Shipyard. Smooth tide correctors have been requested from the Office of Oceanography and Marine Assesment, Sea and Lake Measurement Section.

E. HYDROGRAPHIC SURVEY SHEETS

All field sheets were prepared by the Computer Support Group of Atlantic Hydrographic Section using the HARRIS system and the XYNETICS 1201 plotter. Final field sheets are included with this survey.

All survey records are being forwarded to Atlantic Hydrographic Section N/CG244 for processing.

F. CONTROL STATIONS

SEE ALSO SECTION 2.9. OF THE EVALUATION REPORT.

This survey was conducted using NAD 1983 positions. All control stations used were either existing control or control established by the Coastal Surveys Unit in support of this project.

Three control stations were used for this survey:

FIDEL is a third-order class I station set by personnel of the Coastal Surveys Unit (N/CG23322) in support of this project. Station FIDEL was used for range/azimuth control.

BOLE 1961 RM 2 is an existing third-order class I station that was used as a range/azimuth initial.

TP-7 is a temporary point on the wharf of the Otter Berth located by the Coastal Surveys Unit in support of this project. Station TP-7 was used as a Mini-Ranger calibration site.

G. HYDROGRAPHIC POSITION CONTROL

Position control for this survey was either range/azimuth using a Wild T-2 theodolite and Falcon 484 Mini-Ranger system or See-Boat-Sheet. No standard baseline calibration of the Mini-Ranger system was conducted, instead, a corrector for the system was determined from a fixed point system check. The final corrector was determined by meaning the observed opening and closing values.

This corrector was applied to all range data. The following equipment was used:

Wild T-2 theodolite	S/N 239615
Falcon RPU	E0160
CDU	E 009
R/T	F3389

ANDIST correctors were not applied to the final field sheets.

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

The shoreline for the Waterside portion of this survey was transferred from an engineering drawing provided by the City of Norfolk using a projection table. The shoreline was oriented to the field sheet using shoreline positions provided by the Coastal Mapping Unit. A copy of the engineering drawing, the shoreline positions and sketch of those positions are included in the data. Shoreline for the Freemason Harbor section of this survey was transferred, using the digitizer, from TP-01326. A copy of TP-01326 is included in the data.

I. CROSSLINES

No specific crosslines were run, however, several survey lines cross each other in the area of the Otter berth. Comparison between these lines show excellent agreement with a maximum of one foot difference between soundings.

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

There were no junctional requirements for this survey.

K. COMPARISON TO PRIOR SURVEYS SEE SECTION 6. OF THE EVALUATIONS REPORT.

The most recent prior survey of this area is H-1515b (1882). Due to the extreme age of this survey and the extensive cultural development that has occurred in the ensuing 107 years no comparison was made.

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

This survey was compared with chart 12253, 35th edition, December 13, 1986. Discrete comparisons could not be made due to the scale difference between the chart and field sheet (1:20,000 vs. 1:1200). Comparison of the three charted depths in the area of Waterside to the survey depths indicate that the charted 28 foot sounding is approximately 4 to 9 feet shoaler than the surveyed depths for that area. It is believed that the dredging conducted to maintain the

shipping channel has deepened this area. The charted 18 and 19 foot soundings in the area of Town Point have changed due to the construction of berthing facilities. Significant changes in the charted shoreline have occurred due to the construction of the Waterside Complex, pier and bulkheads. It is recommended that the engineering drawing of Waterside included with this survey be used to update the charted shoreline. The lone 17 foot sounding charted in Freemason Harbor is approximately 3 to 8 feet shoaler than the survey depths. It is believed that maintenance dredging of the channel has caused deepening of this area. The charted shoreline for this area compares well with the T sheet and the observed shoreline.

No AWOIS items are located within the survey boundaries. CONCUR

No Dangers to Navigation were located during this survey. SEE SECTION 7.c. OF THE EVALUATION REPORT.

M. ADEQUACY OF THE SURVEY

This survey is adequate to supersede the charted depths in the area surveyed.

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

N/A

O. STATISTICS

	Launch 1021	Total
Days of Production	2	3
Number of Positions	80	93
Nautical Miles of Sounding Lines	2.3	2.4
Sq. Nautical Miles of Hydrography	0.5	0.5
Number of TDC Casts	1	1
Bottom Samples	0	0
Tide Stations	0	0
Current Stations	0	0
Magnetic Stations	0	0
Detached Positions	0	0

P. MISCELLANEOUS

No Bottom Sample were taken. No anomalous currents or tides were observed during the survey.

Q. RECOMMENDATIONS

It is recommended that consideration be given to the surveying of the remainder of the Elizabeth River. The extreme age of prior surveys of this area make the accuracy of the published charts questionable. CONCUR

R. AUTOMATED DATA PROCESSING

This survey was processed using the programs on the Harris computer system at Atlantic Hydrographic Section.

S. REFERRAL TO REPORTS

The Horizontal Control Report for this survey is located in the files of the Coastal Mapping Unit.

Respectfully Submitted:

David W Moeller

Lieutenant David W. Moeller, NOAA
Hydrographic Surveys Support Coordinator

ATLANTIC MARINE CENTER ELIZABETH RIVER CALIBRATION SITES
LIST OF GEOGRAPHIC POSITIONS

WRK

SPN	STATION NAME	GPN CODE K	LATITUDE DEG MN SEC	LONGITUDE DEG MN SEC	G-NBR
1	BOLE 1961	9	36 51 10.01612	76 17 50.69240	12566
2	BOLE 1961 RM 2	5	36 51 9.81245	76 17 54.11656	
3	PORTSMOUTH MON METHOD CHURCH	9	36 50 9.22691	76 18 9.26663	1550
4	CATHOLIC	9	36 50 7.79984	76 18 13.09694	1659
5	CONDO	5	36 51 .13580	76 17 50.86899	
6	HOSPITAL USE	5	36 50 50.97864	76 18 7.58237	
7	MOON	5	36 51 8.14952	76 18 45.96600	
8	FIDEL	5	36 50 25.80674	76 17 45.31538	
9	TP 1	2	36 50 43.27760	76 17 41.38980	
10	TP 2	2	36 50 41.82775	76 17 39.19082	
11	TP 3	2	36 50 40.61522	76 17 36.53709	
12	TP 4	2	36 50 42.41559	76 17 35.40098	
13	TP 5	2	36 50 41.79704	76 17 33.87253	
14	TP 6	2	36 50 39.99494	76 17 35.01510	
15	TP 7	2	36 50 38.69031	76 17 35.69543	
16	TP 8	2	36 50 38.16458	76 17 35.47992	
17	TP 9	2	36 50 36.09967	76 17 30.40986	
18	TP 10	2	36 50 36.26553	76 17 29.76140	
19	TP 11	2	36 50 36.39310	76 17 29.68703	
20	FLAGPOLE TR 12	2	36 50 42.75558	76 17 35.22177	
21	FLAGPOLE TP 13	2	36 50 42.53593	76 17 34.63340	
22	FLAGPOLE TP 14	2	36 50 42.36755	76 17 34.21820	
23	FLAGPOLE TP 15	2	36 50 42.20121	76 17 33.80413	

APPROVAL SHEET

Item investigation survey FE-336 was conducted in accordance with project instructions S-E201-AHS, the Hydrographic Manual, Hydrographic Survey Guidelines, and the Field Procedures Manual. This survey was conducted under my daily supervision and has been reviewed by me.

This survey is complete and adequate for charting.

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

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: Nov 1, 1989

MARINE CENTER: Atlantic

OPR: E201

HYDROGRAPHIC SHEET: FE-336

LOCALITY: Virginia, Elizabeth River, Town Point

TIME PERIOD: Sept 18 - 19, 1989

TIDE STATION USED: 863-8610 Hampton Roads, VA

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 4.01 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.6 feet

REMARKS: RECOMMENDED ZONING
Apply a x1.13 range ratio to all heights and a
+ 0 hr 08 min time correction.

CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

FE-336

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	
ELIZABETH RIVER	X									1
FREEMASON HARBOR	X									2
NORFOLK (title)	X									3
OTTER BERTH	X									4
TOWN POINT	X									5
										6
										7
										8
										9
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										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

01/05/90

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-336

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	93
NUMBER OF SOUNDINGS	263

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	1	11/29/89
VERIFICATION OF FIELD DATA	45	12/22/89
QUALITY CONTROL CHECKS	7	
EVALUATION AND ANALYSIS	12	01/05/90
FINAL INSPECTION	2	01/05/90
TOTAL TIME	66	

MARINE CENTER APPROVAL 01/05/90

OFFICE OF CHARTING AND GEODETIC SERVICES
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT

SURVEY NO.: FE-336 FIELD NO.: AHS-5-1-89

Virginia, Elizabeth River, Town Point

SURVEYED: 18 September through 24 October 1989

SCALE: 1:5,000 PROJECT NO.: S-E201-AHS

SOUNDINGS: RAYTHEON DSF-6000N, leadline

CONTROL: WILD T-2 Theodolite/MOTOROLA Falcon 484 Mini-Ranger (Range/Azimuth)

Chief of Party.....C. B. Lawrence

Surveyed by.....D. W. Moeller
.....R. H. Whitfield
.....R. Snow

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

1. INTRODUCTION

a. This survey was conducted as the result of a verbal request made by RADM R. E. Moses, Director, Atlantic Marine Center to CDR C. B. Lawrence, Chief, Atlantic Hydrographic Section. The request by RADM Moses was in response to a request from the pilot of the Argentine training vessel LIBERTAD, for a hydrographic survey to be conducted of the Otter Berth located at the Waterside Complex in Norfolk, Virginia. In addition to the survey at Otter Berth, an area in the vicinity of Latitude 36°51'00"N, Longitude 76°17'50"W was also surveyed. The second area is known locally as Freemason Harbor.

b. Two (2) 1:2,500 scale page size plots were generated during office processing, and are attached to this report.

c. No unusual problems were encountered during office processing.

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.

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 (NAD27).

To place this survey on the NAD27 datum move the projection lines 0.533 seconds (16.42 meters or 6.57 mm at the scale of the survey) north in latitude, and 1.213 seconds (30.06 meters or 12.02 mm at the scale of the survey) east in longitude.

b. Shoreline for Otter Berth originates with a 1:600 scale blueprint drawing by the City of Norfolk. Shoreline for the Freemason Harbor area originates with 1:5,000 scale Class III final revised photogrammetric shoreline manuscript TP-01326 of 1983-84.

All shoreline was digitized by Atlantic Hydrographic Section personnel and enlarged to the scale of the survey. Shoreline was applied to the smooth plots from the digital file. Additional offshore features were applied during office processing after a field verification of the City of Norfolk blueprint.

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), and thirty (30) foot depth curves could be drawn in their entirety. The supplemental three (3) and twenty-four (24) foot curves were 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 conform to the requirements of the HYDROGRAPHIC MANUAL.

5. JUNCTIONS

There are no contemporary junctional surveys. There are no junctional requirements listed in the Project Instructions.

6. COMPARISON WITH PRIOR SURVEY H-1515b (1882) 1:10,000

No prior survey comparison was made during office processing because of the extensive cultural changes in the survey area and the age of the prior survey.

The present survey is adequate to supersede the prior survey in the common areas.

7. COMPARISON WITH CHART 12253 35th Edition Dec. 13/86

a. Hydrography

The charted hydrography originates with miscellaneous sources not readily available. Attention is directed to the following:

1) Charted shoreline in the vicinity of Latitude 36°50'42.00"N, Longitude 76°17'41.20"W does not agree with the shoreline shown on the present survey. The charted shoreline shows a very irregular shape while the present survey shoreline shows a smooth curve shape. The charted shoreline has receded 100 meters to the northeast as compared to the present survey shoreline. It is recommended that the charted shoreline be revised as shown on the blueprint by the City of Norfolk or from as built drawings provided to the National Ocean Service Headquarters at the completion of improvements in the survey area.

2) An uncharted pier was located by the field unit in Latitude 36°50'36.85"N, Longitude 76°17'27.19"W. It is recommended that the pier be charted as shown on the present survey; however, due to the scale of chart 12253 application of this pier to future chart editions will be left to the discretion of the chart complier.

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

b. Controlling Depths

There are no conflicts between the present survey depths and the tabulation for Town Point Reach Channel shown on the chart.

c. Dangers to Navigation

There were no Dangers to Navigation submitted by the field unit on this survey. No dangers were discovered during office processing.

d. Aids to Navigation

There are no fixed or floating aids to navigation within the limits of this survey.

8. COMPLIANCE WITH INSTRUCTIONS

This survey complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is a good field examination survey. No additional work is requested.

Deborah A. Bland
Cartographic Technician
Verification of Field Data

Norris A. Wike
Cartographer
Evaluation and Analysis

Robert R. Hill
Senior Cartographic Technician
Verification Check

INSPECTION REPORT
FE-336

The data that make up this Side Scan Sonar survey have been inspected to gain insight into its overall completeness regarding survey coverage, presentation of survey results, and the verification or disproval of charted data. This survey, except as noted in the Evaluation Report, is considered complete and adequate to meet National Ocean Service standards.

Inspection

Robert G. Roberson
Chief, Evaluation and Analysis Group

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

Approved: 5 January 1990

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

Wesley V. Hull, RADM, NOAA
Director, Office of Charting and Geodetic Services

4/3/90

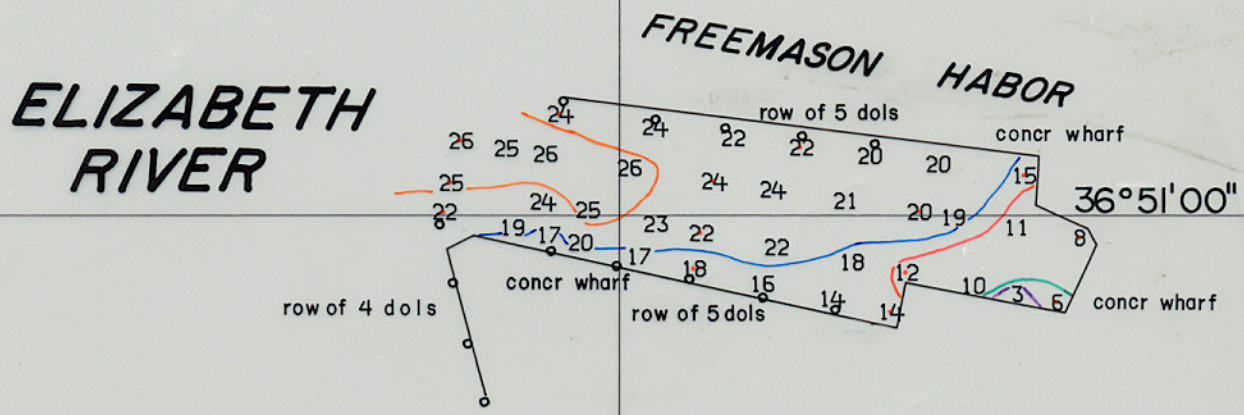
76° 17' 50"

NAD 27
XYNETICS 1201
✓DAB 12-18-89

36° 51' 10"

002

FE-336
VIRGINIA
ELIZABETH RIVER
TOWN POINT
18 SEP, 1989
SCALE: 1: 2500
SOUNDINGS IN FEET AT MLLW
HORIZONTAL DATUM: NAD 1983
SHEET 1 OF 2



76° 18'00"

76° 17' 50"

76°17'50" 76°17'40" 76°17'30" 36° 50' 50"

FE-336
VIRGINIA
ELIZABETH RIVER
TOWN POINT
18 SEP TO 24 OCT, 1989
SCALE: 1:2500
SOUNDINGS IN FEET AT MLLW
HORIZONTAL DATUM: NAD 1983
SHEET 2 OF 2

ELIZABETH RIVER

TOWN POINT

OTTER BERTH

concr wharf

concr wharf

concr wharf

concr wharf

pier

floating piers

floating piers

wooden wharf

pier

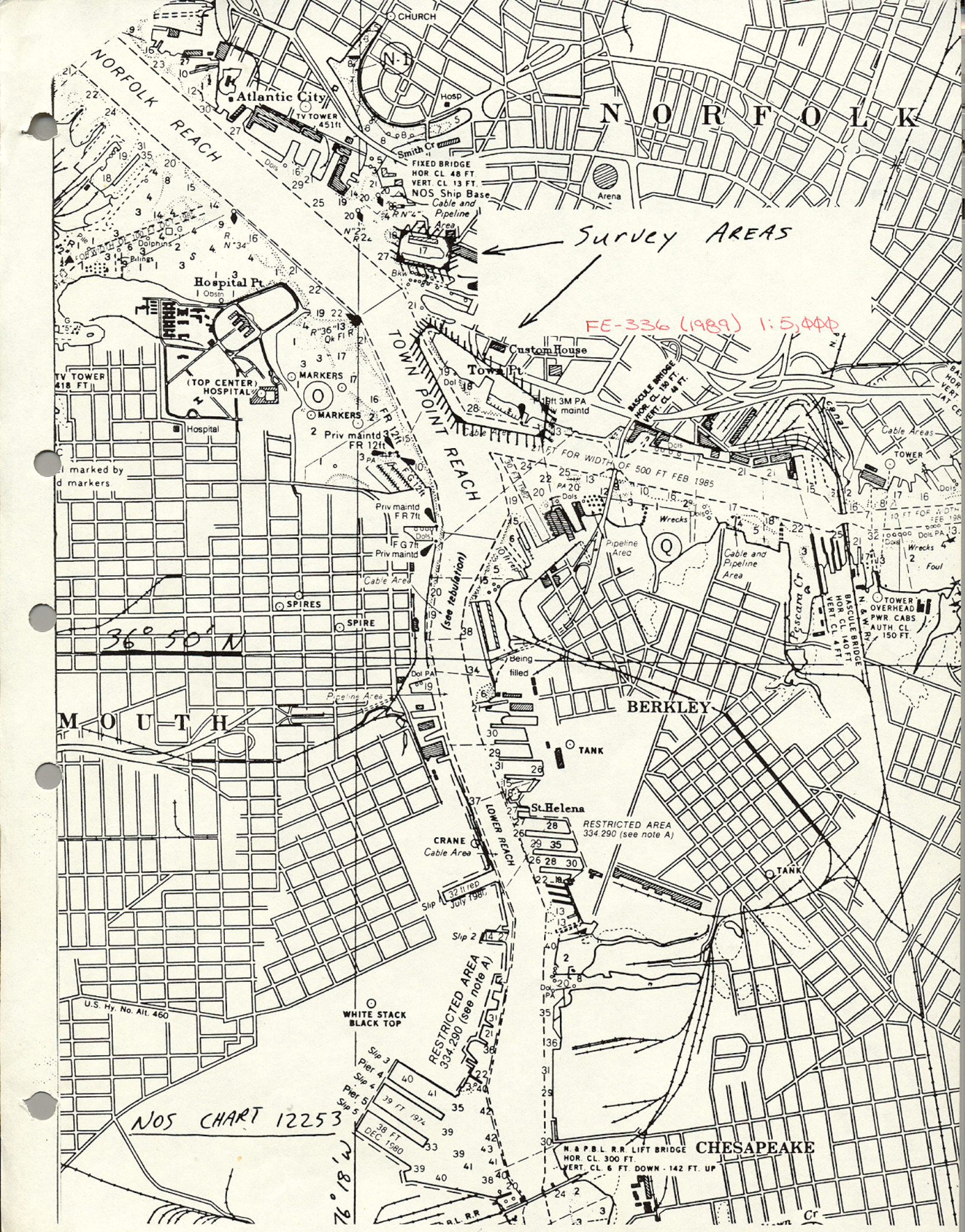
floating platform

dols

36° 50' 40"

76° 17' 50" 76° 17' 40" 36° 50' 30"

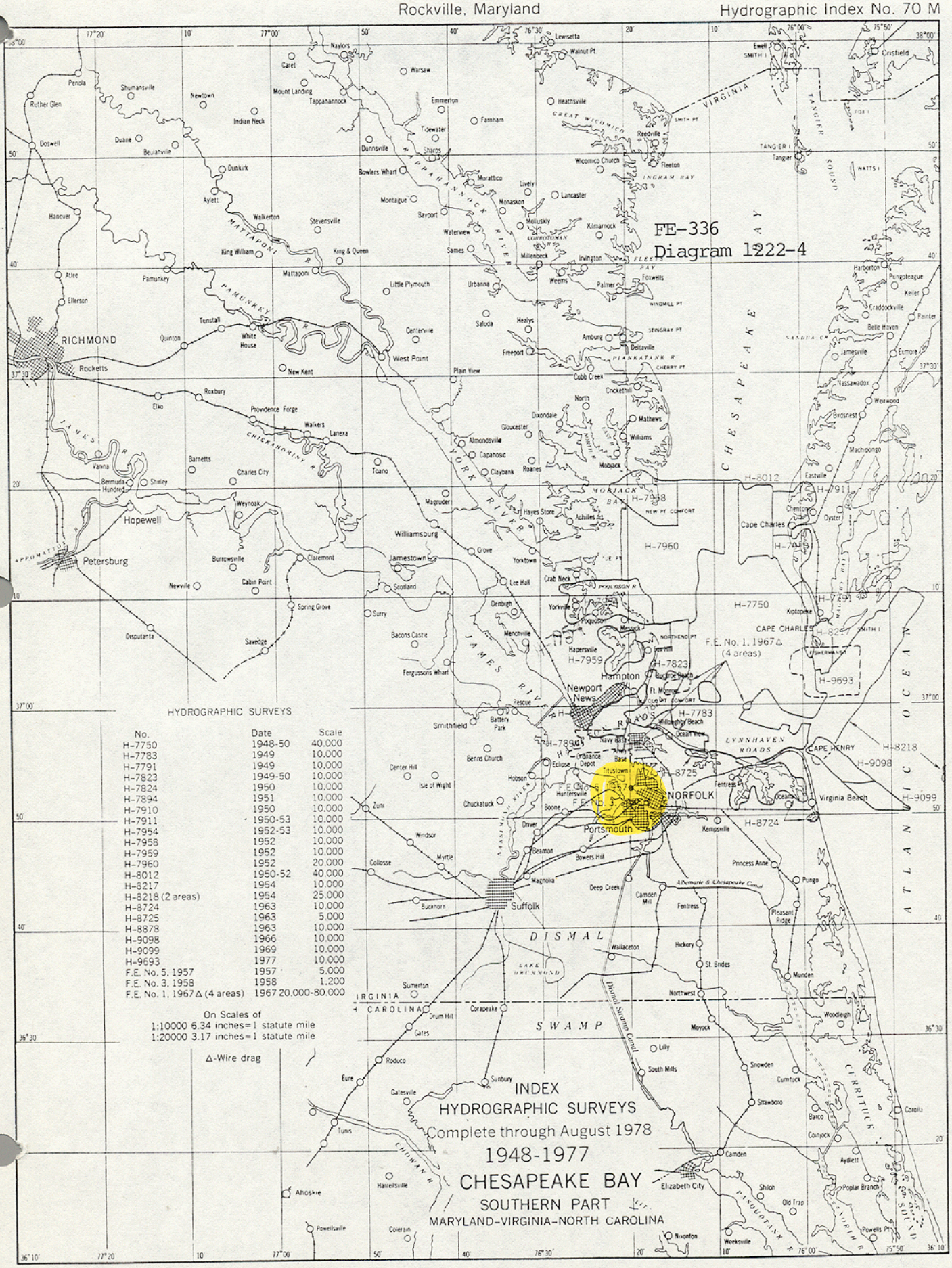
NAD 27
XYNETICS 1201
DAB 12-18-89



Survey AREAS
FE-336 (1989) 1:5,000
NORFOLK
NORFOLK REACH
Atlantic City
TV TOWER 451ft
CHURCH
Hosp
Smith Cr
FIXED BRIDGE HOR. CL. 48 FT. VERT. CL. 13 FT.
NOS Ship Base
Cable and Pipeline Area
Arena
Hospital Pt.
Dolphins
Pilings
TV TOWER 418 FT
(TOP CENTER) HOSPITAL
MARKERS
Hospital
Priv maintd FR 12ft
Priv maintd FR 7ft
FG 7ft
Priv maintd
Cable Area
SPIRES
SPIRE
TOWN POINT REACH
Custom House
Town Pt.
BASCULE BRIDGE HOR. CL. 150 FT. VERT. CL. 44 FT.
21 FT FOR WIDTH OF 500 FT FEB 1985
Wrecks
Pipeline Area
Cable and Pipeline Area
Cable Areas
TOWER
Pescara Cr
BASCULE BRIDGE HOR. CL. 140 FT. VERT. CL. 4 FT.
N. & W. RY.
TOWER OVERHEAD PWR. CABS AUTH. CL. 150 FT.
Wrecks
Foul
(see tabulation)
36° 50' N
Being filled
Pipeline Area
MOUTH
BERKLEY
TANK
St. Helena
RESTRICTED AREA 334.290 (see note A)
LOWER REACH
CRANE
Cable Area
Slip 1
32 ft rep July 1980
Slip 2
RESTRICTED AREA 334.290 (see note A)
U.S. Hy. No. Alt. 460
WHITE STACK BLACK TOP
Slip 3
Pier 4
Slip 4
Pier 5
Slip 5
39 FT 1974
38 FT DEC 1980
NOS CHART 12253
76° 18' W
N. & P.B.L. R.R. LIFT BRIDGE HOR. CL. 300 FT. VERT. CL. 6 FT. DOWN - 142 FT. UP
CHESAPEAKE

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

NOAA FORM 75-96
(10-83)

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

EXAMINED FOR NM
GDBU
10-17-90 HS

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-336

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
12253	3-6-91	Ed Martin	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 52
12206	10-9-91	Ken Forster	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 26 thru cht 12253.
			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
			Drawing No.
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			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED. Appld to Stds 4-30-90