

F00495

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey **Field Examination**

Registry No. **F00495**

LOCALITY

State/Territory **Maryland**

General Locality **Baltimore Harbor**

Sub-locality **Canton Piers & Sparrows Pt.**

2004

CHIEF OF PARTY
Holly A. DeHart, LTJG, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28
U.S. DEPARTMENT OF COMMERCE
(11-72)
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTRY NUMBER:

F00495

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 NUMBER: N/A

State/Territory: **Maryland**

General Locality: **Baltimore Harbor**

Sub-Locality: **Canton Piers and Sparrows Point**

Scale: **1:10,000** Date of Survey: **3/1/04 to 3/25/04**

Instructions Dated: **03/17/04** Project Number: **F00495**

Vessel: **NOAA S/V BAY HYDROGRAPHER, S-5501**

Chief of Party: **Lieutenant (j.g.) Holly A. DeHart, NOAA**

Surveyed by: **LTJG Holly A. DeHart, PS Peter Holmberg**

Soundings by: **Reson SeaBat 8125 multibeam sonar**

Graphic record scaled by: **LTJG Holly A. DeHart, PS Peter Holmberg**

Graphic record checked by: **LTJG Holly A. DeHart, PS Peter Holmberg**

Protracted by: **N/A** Automated Plot: **HP-1055cm plus *Field***
HP DesignJet 2500CP Office

Verification by: **Atlantic Hydrographic Branch *Personnel***

Soundings in: ***Fees* Meters at MLLW**

Remarks: ***Bold, italic, red notes in this Descriptive Report were made during office processing***

- 1) All Times are UTC.***
- 2) This is a basic Hydrographic Survey.***
- 3) Projection is UTM Zone 18.***

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DESCRIPTIVE REPORT

to accompany

Hydrographic Survey F00495

Scale of Survey: 1:10,000

Year of Survey: 2004

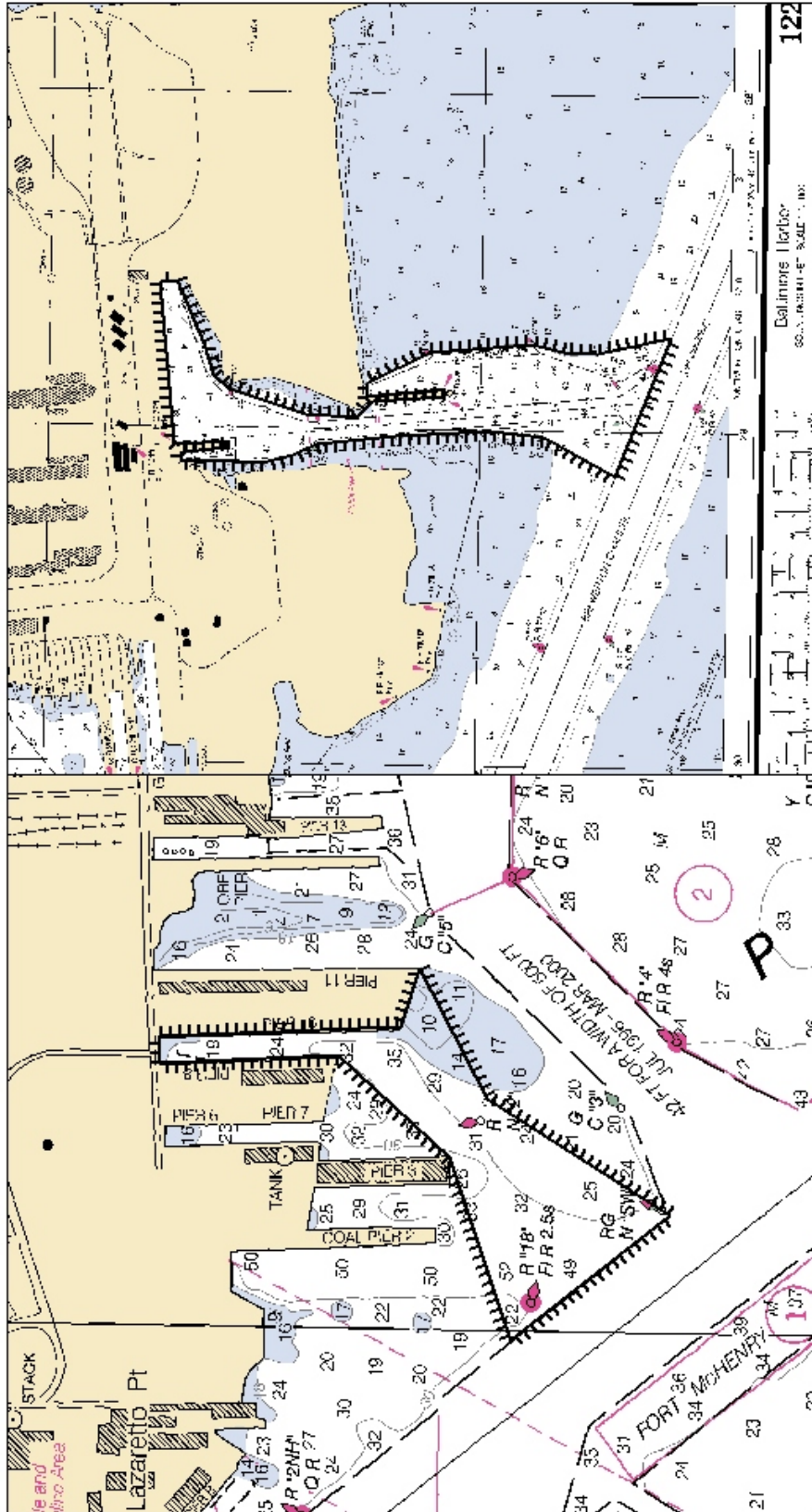
NOAA S/V BAY HYDROGRAPHER
LTJG Holly A. DeHart, Officer-In-Charge

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Hydrographic Survey Letter Instructions for project S-E913-BH, Baltimore Harbor, Maryland. The instructions are dated March 17, 2004. No subsequent changes affecting this survey were made to the letter instructions.

The survey limits, displayed graphically in the chartlet on the following page, are located within the Canton Piers and Sparrows Point commercial shipping terminals in Baltimore Harbor, MD.

This is a 100% multibeam survey. Although not assigned for this specific survey, side scan data had been acquired in the vicinity of Sparrows Point terminal in conjunction with project S-E603-BH. This data was reviewed during processing/analyses for F00495 and, thus, has been submitted with the digital data package.



This chartlet has been corrected through
 Notice to Mariners dated 5/31/2003
 NOT FOR NAVIGATION.

	<p>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE</p>	<p>Project: S-E913-BH Survey: F00495 State: Maryland Locality: Baltimore Harbor Sub-locality: Canton Piers and Sparrows Point Survey Scale: 1:10,000</p>	<p>Sounding Units: Feet Sounding Datum: MLLW Horizontal Datum: WGS 84 Projection: UTM 18 Central Meridian: 075° 00' 00" Scale Factor: 0.9996</p>	<p>BAY HYDROGRAPHER LTJG Holly A. Dehart Commanding March 2, 2004 to March 25, 2004</p>
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B. DATA ACQUISITION AND PROCESSING *See also the Evaluation Report*

B.1. EQUIPMENT

All data were acquired by NOAA S/V BAY HYDROGRAPHER. BAY HYDROGRAPHER is a 17.018 meter vessel with average transducer draft of 0.840 meters. The vessel was configured as described in the Data Acquisition and Processing Report (DAPR)* for this project. Major data acquisition systems are summarized below.

NOAA S/V BAY HYDROGRAPHER acquired High Speed/High Resolution side scan sonar (HSHRSSS), and shallow water multibeam (SWMB) data. HSHRSSS data were acquired with Klein T-5500 side scan sonar towfish. SWMB data were acquired with a Reson Seabat 8125 shallow water multibeam sonar. BAY HYDROGRAPHER utilized a TSS POS/MV position and orientation system to acquire positioning and attitude data. All velocity casts were conducted with a Sea-Bird SBE 19 SEACAT Profiler (S/N 1913768-2039).

No unusual vessel configurations were employed on this project. Refer to the project DAPR* for detailed vessel configuration information.

B.2. QUALITY CONTROL

No unusual conditions which would degrade or compromise data quality were encountered during survey operations.

Side Scan Sonar Quality Control

Daily confidence checks were made with each system by observing the outer ranges of the sonar images. A satisfactory check was determined by the ability to distinguish contacts or known features across the entire range of the side scan trace.

Shallow Water Multibeam Quality Control

A bathymetry confidence check, performed in ISIS, provided real-time comparison of the VBES data to nadir soundings from the SWMB system. This comparison was monitored for significant discrepancies during data acquisition.

**DAPR filed at the Atlantic Hydrographic Branch (AHB)*

Crosslines

This FE consists of a 100% SWMB investigation of two small shipping terminals. Survey lines varied in direction and data was acquired over a period of four days. Lines specifically designated as cross lines were not run.

Junctions

No contemporary surveys were available for junction comparisons.

B.3. CORRECTIONS TO ECHO SOUNDING

All survey methods and instruments were implemented as described in the Corrections to Echo Soundings section of the DAPR* for this project.

A table detailing all sound velocity casts is contained in Separates III **- Sound Velocity Profile Data. Sound velocity data has been submitted with the digital data package. Cast data is organized on the digital media as follows: day of cast / cast data.

Vertical Control

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) tide station at Baltimore, MD (857-4680) served as the control for datum determination.

Tidal zoning for this survey is consistent with the Letter Instructions. The entire survey area is contained within two tidal zones. The zone data applicable for this survey is as follows:

ZONE NAME	TIME CORRECTOR (MIN)	RANGE RATIO	REFERENCE STATION
NCB123	+0	x1.00	857-4680
NCB117	+0	x0.96	857-4680

A Request for Approved Tides was submitted via email to N/OPS1 on March, 31 2004 (See Appendix IV). Verified tides from the N/OPS1 CO-OPS website were periodically downloaded by BAY HYDROGRAPHER personnel. Verified tidal data for this survey were concatenated into one file*** and applied to all sounding data.

* *DAPR filed at AHB*

** *Filed with the original field records*

*** *Not submitted as one file; tidal data was submitted as three files*

Horizontal Control *See also the Evaluation Report*

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 18.

Sounding positional control was established using Global Positioning System (GPS) corrected by the nearest U.S. Coast Guard differential GPS reference station. The differential beacon used for this survey was Annapolis, MD (frequency 301 kHz). The differential beacon at Driver, VA (frequency 289 kHz) served as a secondary beacon for this survey area in the event that problems occurred with the Annapolis beacon. No horizontal control stations were established for this survey.

The horizontal dilution of precision (HDOP) was monitored during data acquisition. HDOP values did not exceed 4.00, and adequate satellite coverage was maintained throughout survey operations. All positioning equipment was operated in a manner consistent with the manufacturers requirements and as described in the DAPR*.

Detailed information regarding vertical and horizontal control is included in the Vertical and Horizontal Control Report. See Appendix IV** - Tides and Water Levels.

* *DAPR filed at AHB*

** *Filed with the original field records*

D. RESULTS AND RECOMMENDATIONS *See also the Evaluation Report*

D.1. CHART COMPARISON

Two NOS charts are affected by this survey:

12278, 73rd edition, November, 2003, 1:40,000

12281, 49th edition, May, 2000, 1:15,000

General Agreement with Charted Soundings

Canton Piers

No shoaling was identified in the survey area at Canton Piers. It is apparent that dredging has been performed since the previous survey, and several areas are noted to be deeper than charted depths. Deepening is noted in the vicinity of the following positions:

- | | |
|----------------------------------|---|
| • 39°15'18.72" N 076°33'58.72" W | Approximately 28 feet deeper than charted |
| • 39°15'14.03" N 076°33'48.99" W | Approximately 22 feet deeper than charted |
| • 39°15'18.23" N 076°33'49.97" W | Approximately 5 feet deeper than charted |
| • 39°15'21.11" N 076°33'45.32" W | Approximately 5 feet deeper than charted |
| • 39°15'23.63" N 076°33'40.71" W | Approximately 6 feet deeper than charted |
| • 39°15'33.26" N 076°33'38.08" W | Approximately 7 feet deeper than charted |
| • 39°15'37.16" N 076°33'38.32" W | Approximately 6 feet deeper than charted |

Concur The scales of the smooth plots and the chart do not permit these deep soundings to be shown.

Sparrows Point

Significant shoaling was identified in the survey area at Sparrows Point. With few exceptions, the entire survey area was noted to be two to six feet shoaler than charted depths.

Concur

AWOIS Items and Item Investigations

There are no AWOIS items located within the survey limits. ***Concur***

Charted Features

No new charted features were observed in the survey area. ***Concur***

Charting Recommendations

The hydrographer recommends charting present survey soundings within both survey areas and adjusting the 30 foot contours accordingly at Canton Piers. ***Concur***

D.2. ADDITIONAL RESULTS**Aids to Navigation (ATON's)**

BAY HYDROGRAPHER did not verify ATON positions within the survey boundaries.

Prior Survey Comparisons

No prior survey comparisons were conducted by BAY HYDROGRAPHER personnel.

Bridges, Overhead Cables and Overhead Pipelines

No bridges or overhead cables are located within the survey limits. *Concur*

Ferry Routes

No ferry routes or ferry terminals are located within the survey limits. *Concur*

Submarine Cables and Pipelines

No submarine cables or pipelines are located within the survey limits. *Concur*

Drilling Structures, Platforms and Well Heads

No drilling structures, platforms or well heads were charted or observed within the survey area. *Concur*


E. APPROVAL SHEET

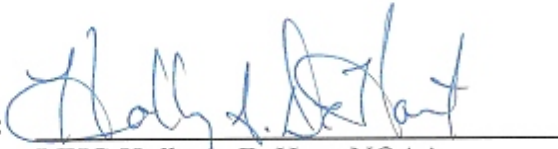
**S-E913-BH-04
Baltimore Harbor
Maryland**

**Canton Piers and Sparrows Point
Survey Registry No. F00495**

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All field sheets, this Descriptive Report, and all accompanying records and data are approved.

This survey is adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

Submitted: 
Peter Holmberg, NOAA
Physical Scientist

Approved and Forwarded: 
LTJG Holly A. DeHart, NOAA
Officer-In-Charge

APPENDIX I

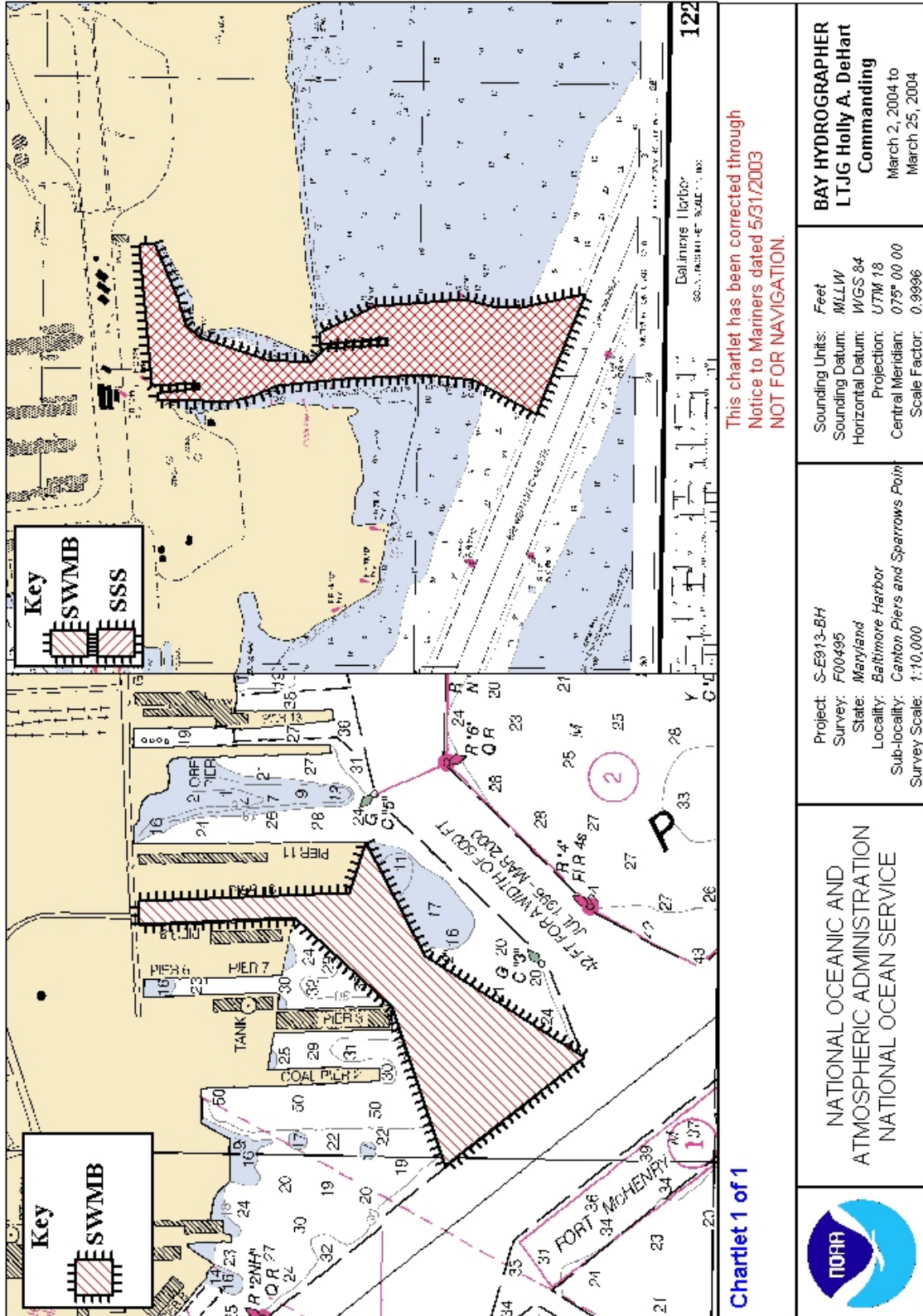
DANGERS TO NAVIGATION REPORTS

No Dangers to Navigation were identified during this survey.


APPENDIX II

No “new” geographic names were identified within the survey area of F00495. A complete investigation of geographic names will be conducted at the Atlantic Hydrographic Branch.

APPENDIX III
FINAL PROGRESS SKETCH



This chartlet has been corrected through
Notice to Mariners dated 5/31/2003
NOT FOR NAVIGATION.

<p>BAY HYDROGRAPHER LTJG Holly A. DeHart Commanding March 2, 2004 to March 25, 2004</p>	<p>Sounding Units: Feet Sounding Datum: MLLW Horizontal Datum: WGS 84 Projection: UTM 18 Central Meridian: 075° 00 00 Scale Factor: 0.9996</p>	<p>Project: S-E913-BH Survey: F00495 State: Maryland Locality: Baltimore Harbor Sub-locality: Canton Piers and Sparrows Point Survey Scale: 1:10,000</p>	<p>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE</p>	
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Chartlet 1 of 1

APPENDIX IV

TIDES AND WATER LEVELS

A copy of the Request for Verified Tides, dated March 31, 2004, the Abstract of Times of Hydrography, and the Vertical and Horizontal Control Report are contained within this digital package.

APPENDIX V**SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCES**

The following supplemental records and correspondences have been included within this appendix:

V.1. COAST PILOT REPORT

The Coast Pilot was reviewed for this survey area. No discrepancies were noted.

V.2. AIDS TO NAVIGATION

No changes to ATONs were observed during this survey.

V.3. CORRESPONDENCE

No formal correspondence was conducted during this survey.

V.4. BOTTOM SAMPLES

No bottom samples were collected during survey F00495.

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR F00495 (2004)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

B. DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System
MicroStation J, version 7.01
I/RAS B, version 7.01
MapInfo, version 6.5
CARIS HIPS/SIPS 2000 version 5.3
PYDRO, version 3.71

The smooth sheet was plotted using a Hewlett Packard DesignJet 2500CP plotter.

B.2. JUNCTIONS

There are no junctional surveys to the north, south, east, or to the west. Present survey depths are in harmony with the charted hydrography to the north, south, east and to the west.

B.3. HORIZONTAL CONTROL

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.

D. RESULTS AND RECOMMENDATIONS

D.1. COMPARISON WITH CHART 12281 (49th Edition, May 13/00)

Hydrography

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section D. of the Descriptive Report.

Two pilings in the vicinity of Latitude 39°12'34", Longitude 76°29'03" were not addressed by the field personnel. It is recommended that the pilings be retained as charted.

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

Controlling Depths of Channel

The controlling depth notes for the Sparrows Point Channel are no longer correct. Upon consultation with Mr. Joseph Robinson, Marine Chart Division, and Mr. Howard Danley, Navigation Services Division, it was decided to keep the current channel delineations, delete the depth notations, and chart the present survey depths.

COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not done during office processing in accordance with section 4. of the memorandum titled "Changes to Hydrographic Survey Processing", dated May 24, 1995.

ADEQUACY OF SURVEY

This is an adequate field examination survey. No additional field work is recommended.

MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. The following NOS Charts were used for compilation of the present survey:

12281 (49th Edition, May 13/00)

F00495

Marilyn Schluter

Marilyn L. Schluter

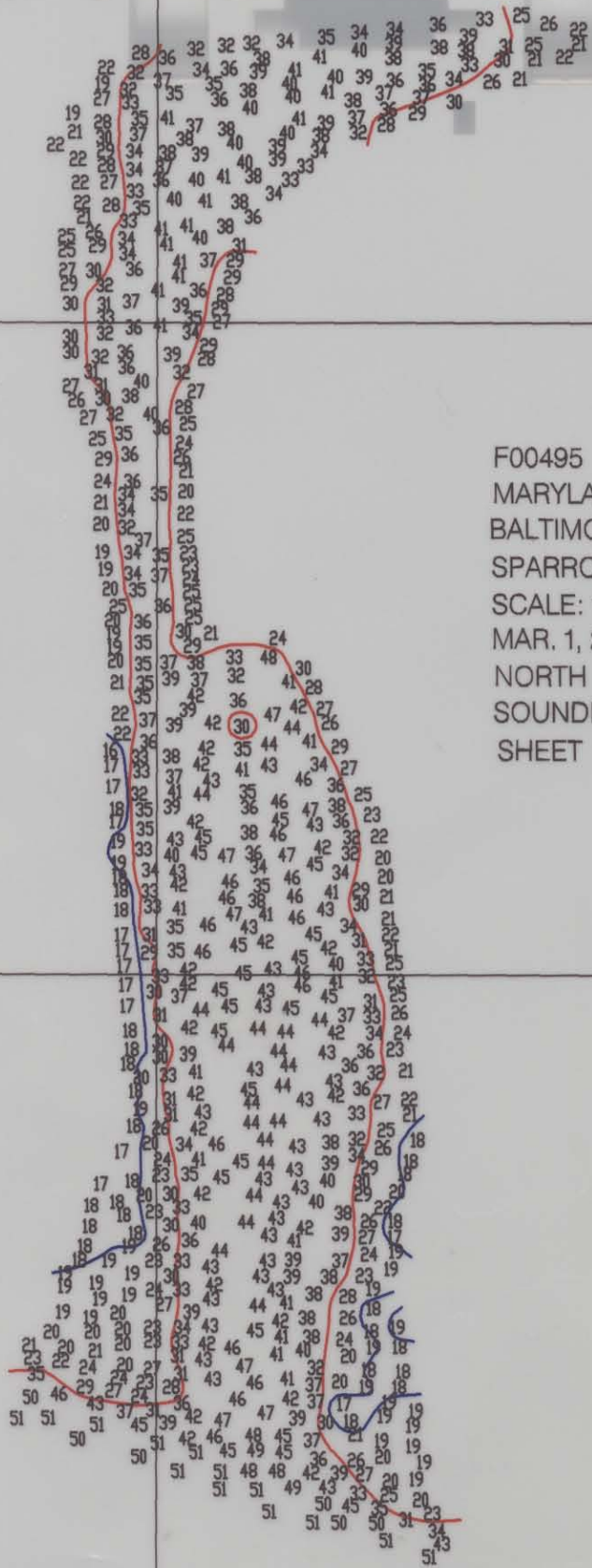
Cartographer

Verification of Field Data

Evaluation and Analysis

76° 29'00"

76° 28'30"



39° 12'30"

F00495
 MARYLAND
 BALTIMORE HARBOR
 SPARROW POINT
 SCALE: 1:10,000
 MAR. 1, 2004 - MAR. 25, 2004
 NORTH AMERICAN DATUM OF 1983
 SOUNDINGS IN FEET AT MLLW
 SHEET 1 OF 2

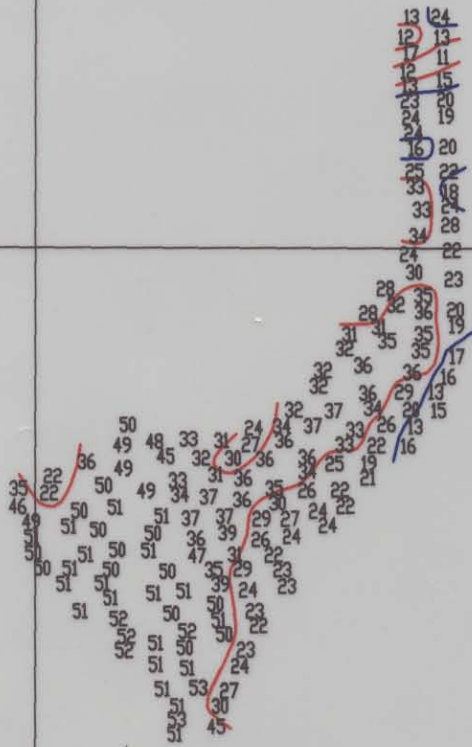
39° 12'00"

39° 11'30"

76° 34'00"

76° 33'30"

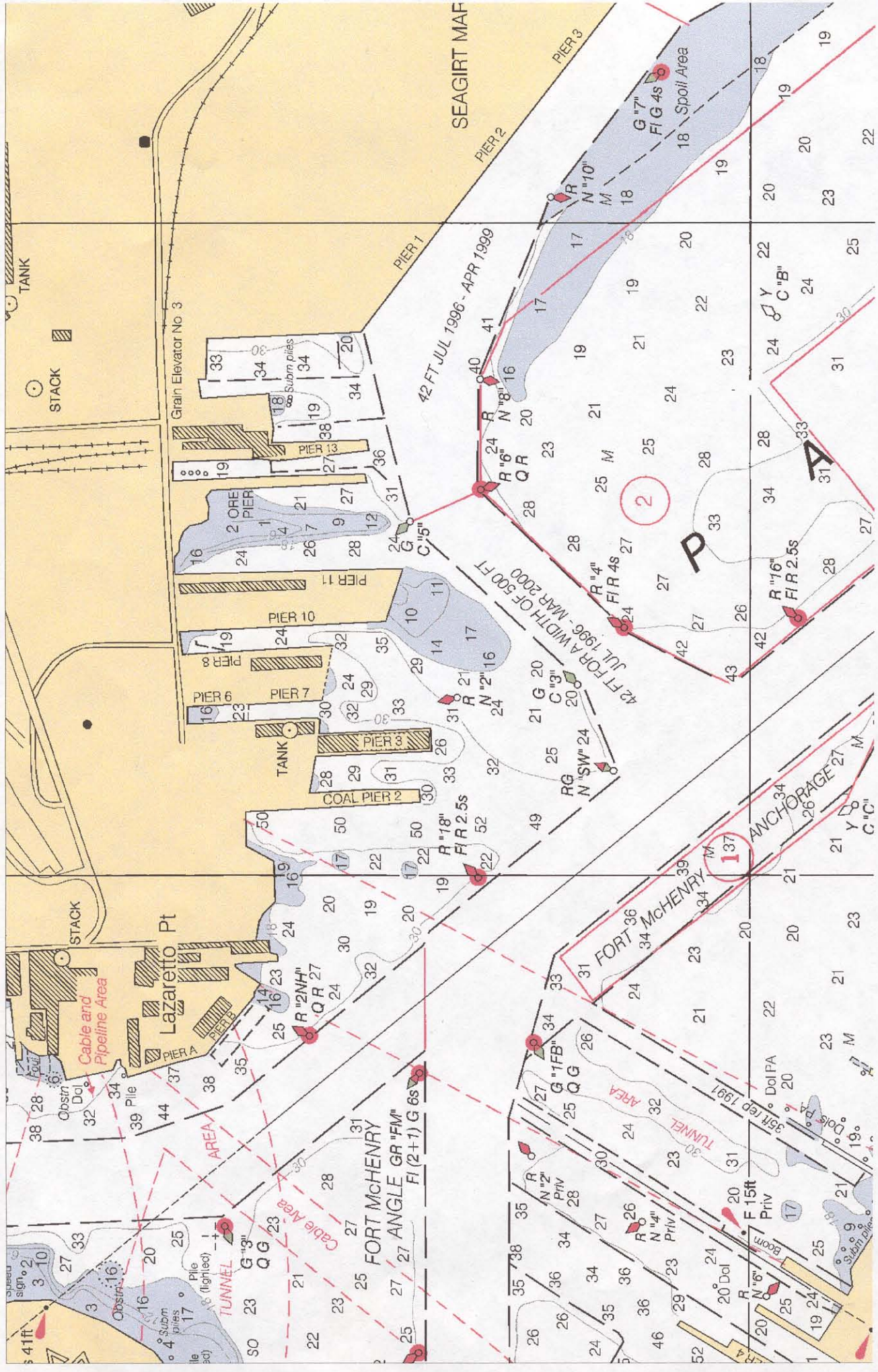
39° 16'00"



39° 15'30"

F00495
 MARYLAND
 BALTIMORE HARBOR
 CANTON PIERS
 SCALE: 1:10,000
 MAR. 1, 2004 – MAR. 25, 2004
 NORTH AMERICAN DATUM OF 1983
 SOUNDINGS IN FEET AT MLLW
 SHEET 2 OF 2

39° 15'00"



APPROVAL SHEET
F00495

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. All revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Richard W. Blevins

Richard W. Blevins
Cartographer,
Atlantic Hydrographic Branch

Date: 06/16/04

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.

Approved:

Emily B. Christman

Emily B. Christman
Commander, NOAA
Chief, Atlantic Hydrographic Branch

Date: 6/17/04

AWOIS/SURPV 6/20/04 55V

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. F00495

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
12281	6/16/04	Marilyn Schlüter	Full Part Before After Marine Center Approval Signed Via Drawing No.
ps 12281	6/30/04	Chris Cognata	Full Part Before After Marine Center Approval Signed Via Drawing No.
ps 12278	6/30/04	Chris Cognata	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.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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