

F00438

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. AHP-5-1-98

Registry No. F00438

LOCALITY

State Maryland

General Locality Chesapeake Bay

Locality Baltimore Harbor

1998

CHIEF OF PARTY
Brian A. Link

LIBRARY & ARCHIVES

DATE APR 7 1999

HYDROGRAPHIC TITLE SHEET

FE00438

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-5-1-98

State Maryland

General locality Chesapeake Bay

Locality Baltimore Harbor

Scale 1:5,000

Date of survey January 13 to May 20, 1998

Instructions dated 4-25-96

Project No. OPR-E346-AHP

Vessel NOAA Launch 1017

Chief of party Brian A. Link

Surveyed by Brian A. Link and Glenn D. Hendrix

Soundings taken by echo sounder, hand lead, pole Innerspace 448 Echosounder

Graphic record scaled by BAL, GDH

Graphic record checked by BAL, GDH

Protracted by _____

*HEWLETT PACKARD DESIGN JET 2500CP
PLOTTER (OFFICE)
Automated plot by MapInfo Version 5.0 (FIELD)*

Verification by Atlantic Hydrographic Branch PERSONNEL

Soundings in fathoms meters at MLW MLLW (plotted in feet at MLLW)

REMARKS: * Change No. 4 dated March 25, 1998

BAL - Brian A. Link

GDH - Glenn D. Hendrix

*NOTES IN DESCRIPTIVE REPORT WERE MADE IN RED
DURING OFFICE PROCESSING*

AWOIS/SURP ✓ 4/5/99 SJL

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY FE00438
FIELD NO. AHP-5-1-98
SCALE: 1:5,000
1998
ATLANTIC HYDROGRAPHIC PARTY
CHIEF OF PARTY: Brian A. Link (Acting)

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions for OPR-E346-AHP, Northern Chesapeake Bay - Baltimore Harbor, Maryland, dated April 17, 1995 as amended by Change No. 3, dated January 15, 1998.

This project responds to requests from the Maryland Pilots Association, the U.S. Army Corps of Engineers, and the U.S. Coast Guard for modern hydrographic surveys in the northern Chesapeake Bay region because of the growth in international bulk and container trade in the past few decades. Specifically, this survey responds to the Maryland Pilots Association's request for 200% side scan sonar coverage in selected areas and pier slips within the Baltimore Harbor and Curtis Creek areas.

B. AREA SURVEYED

The area surveyed for FE00438 covers selected (by the Maryland Pilots Association) pier slips within Baltimore Harbor including the Consolidated Coal Sales Co. Piers, Lazaretto Depot, Canton Pier, Clinton Street Piers, Petroleum Fuel and Terminal Co. Docks and the Broadway Municipal and Recreation Pier. Slips within Curtis Creek including the CSX Transportation Oil Pier, the Essex Industrial Chemicals Main Wharf, and three slips south of Sleds Point were also included in the area surveyed. The Bethlehem Steel Corporation's Sparrows Point facility ore unloading dock was also surveyed. All of these pier slips fall within the following geographic boundaries:

North - 39°17'00"N
South - 39°12'00"N
East - 076°28'00"W
West - 076°~~38~~³⁶'00"W

This survey was conducted from January 13 (DN 013) to May 20, 1998 (DN 140).

C. SURVEY VESSELS

NOAA launch 1017, a 28-foot Jensen, was the vessel used to collect all survey data. There were no unusual vessel configurations nor problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING *SEE ALSO EVALUATION REPORT*

Coastal Oceanographic's HYPACK software package, version 6.4 was used to collect all hydrographic data for this survey. HPS version 4.03 was used for data processing.

Other computer programs used were:

MapInfo	Ver. 4.5
VELOCITY	Ver. 3.1 (2/25/98)

I

E. SIDE SCAN SONAR EQUIPMENT

Side scan sonar (SSS) operations were conducted using an EG&G model 260 slant-range corrected SSS recorder and an EG&G 272-T dual-channel, single frequency towfish. The towfish was operated on the 100-kHz frequency and was configured with a 20° beam depression. The side scan sonar equipment used for the survey was towfish serial number 0011901 and recorder serial number 0012102.

Side scan sonar data was collected utilizing the 25-meter range scale. In order to acquire the required 200% coverage, main-scheme lines were run at 20-meter spacing. Adequate coverage was determined by producing two separate swath plots and ensuring 100% coverage on each plot.

The side scan sonar towfish was maintained at a height off the bottom of 8 to 20 percent of the range scale used. Confidence checks were performed on a routine basis, primarily by noting changes in bottom texture on the outer edges of the sonargram, and on buoys and other contacts in the survey area.

All significant contacts were measured off the sonargrams and entered into an HPS contact table. Field Party personnel determined contact heights, positions, and cross reference correlation using the HPS contact Utility program. The contacts listed below were investigated by echo sounder development. A complete list of all contacts found on this survey is included in the separates.

<u>Contact Name</u>	<u>Contact Height (M)</u>
199.85	1.5
225.70	1.1
242.90	2.0

<u>CROSS REF</u>	
243.55	2.9 DEV
336.25 - 348.4	1.4 INSIG
315.25	1.0 DEV
(1.2) 336.30 - 336.2 (1.5), 348.5 (1.0)	1.2 SIG
348.40 - 336.25	2.5
348.55 P 336.0, 330.2	1.2
350.40	2.1 INSIG
422.21	2.0

Contacts 199.85, 225.7, ~~242.2~~, 242.9 and 243.55 were developed at 10-meter line spacing on day 140, (positions 1157 - 1658) nothing was found. The bottom is very jagged in the area of these contacts. The hydrographer recommends that the survey soundings be charted.
 (AREA 7) PLOT 7 OF 8

Contacts 274.8 and 280.0 were developed at 10-meter line spacing on day 126, (positions 1044 - 1127) and nothing was found. The hydrographer recommends that the survey soundings be charted. * PLOT 7 OF 8 (AREA 7)

Contact 315.25 was developed at 10-meter line spacing on day 126, (positions 1014 - 1040). A detached position (number ~~1019~~) was taken while on line when a peak appeared on the echogram close to the contact position. The hydrographer recommends that a ^{47.5}44.9 foot sounding (13.7m) corrected by ^{smooth}predicted tides, be charted at 39°15'45.15"N, 076°34'32.67"W. ^{SHORLER SOUNDINGS IN VICINITY}
 (AREA 7) ^{smooth}PLOT 7 OF 8 DO NOT CONCUR ON RECOMMENDATION.

Contacts 336.25, 336.30, 348.4, 348.55 and 350.4 are located alongside mooring piers for Moran tugs. They tugs are 60 to 70 feet long and draw 10 to 15 feet of water. The contacts are beneath the tugs when they are moored and do not create a hazard to navigation. The slip is located in the inner harbor of Baltimore and is also used for public mooring. The hydrographer recommends that a submerged obstruction not be charted because it would discourage the public from mooring at these piers. CONCUR * PLOT 8 OF 8 (AREA 9)

Contact 422.21 was located using an echosounder search. The contact was located and a detached position, (position 1042) was taken on day 126. The hydrographer recommends that a submerged obstruction be charted at 39°15'49.544"N, 076°34'18.754"W with a least depth ^{75.6.5}75.6.5 feet (2.3m) corrected for ^{smooth}predicted tides, velocity and draft. This feature is located very near a charted pier in ruins, and is not considered a danger to navigation. CONCUR
~~Obstac FALLS WITHIN CHARTED EQUAL LIMITS, NO CHANGE IN CHARTING~~
 PLOT 7 OF 8 (AREA 7)

AKW
4-7-99

F. SOUNDING EQUIPMENT

An Innerspace model 448 depth sounder, serial number 243, was used to collect all soundings.

A standard lead line calibrated in meters, serial number 1017, was used during this survey for comparison readings with the echo sounder.

G. CORRECTIONS TO SOUNDINGS

Soundings were recorded using the Innerspace model 448 depth sounder. It was adjusted for an assumed speed of sound through water of 1500 meters/second. Changes to the gain and/or chart speed were noted on the echogram. Digitized soundings agreed with the analog trace within 0.1 meter.

Corrections for the speed of sound through water were computed from data obtained with Sea-Bird Electronics Inc. SEACAT electronic profiler, serial number 192276-287. Data quality assurance tests were performed in accordance with Field Procedures Manual (FPM) 2.1.3.2. Program VELOCITY was used to compute speed of sound through water corrections. Copies of the velocity tables and cast data are in the "Survey Separates."~~*~~

Correctors for the velocity of sound through water were determined from the casts listed below:

Vessel	Year	Table Number	Cast Number	Deepest Depth (m)	Applicable DN	Position	Day
1017	1998	60	34	8.0/10.4*	013-014	39°11.0' / 76°26.5'	364
1017	1998	61	35	14.3/18.5*	078-083	39°09.5' / 76°22.0'	077
1017	1998	62	36	15.7/20.4*	092-093	39°09.3' / 76°22.0'	097
1017	1998	63	37	14.8/19.3*	125-140	39°14.0' / 76°33.0'	112

* software extrapolated depth

Correctors were applied to the sounding data prior to plotting.

Weather permitting, lead line comparisons were conducted each day in accordance with FPM 2.1.3.1. No instrument error was detected from these comparisons. The lead line comparison form is in the "Survey Separates."~~*~~

A static draft of 0.4 meter was applied to the on-line data. The draft was measured by subtracting the difference from a punch mark on the side of launch 1017, 0.6 meter above the transducer, to the water surface. Settlement and squat measurements were performed on January 31, 1997 (DN 031), at Pasadena, Maryland, using Lietz level S/N 08754. Settlement and squat correctors and the static draft corrector were applied on-line through the offset table. Copies of the field data, the graphs of the settlement and squat correctors vs. speed in meters/second, and the offset table are included in the "Survey Separates."~~*~~

The Baltimore, Maryland, tide station 875-4680, served as control for datum determination. This station is also the reference station for predicted tides which were applied to the final sounding plot. There were no time or range correctors applied to the predicted tides.

~~*~~ DATA FILED WITH FIELD RECORDS

Approved tides were requested from the Ocean and Lake Levels Branch, N/OES231, in a letter dated July 9, 1998. A copy of the letter is appended to this report. *APPROVED TIDES AND ZONING WERE APPLIED DURING OFFICE PROCESSING*

H. CONTROL STATIONS *SEE ALSO EVALUATION REPORT*

The horizontal control datum for this project is the North American Datum of 1983. The USCG Differential GPS (DGPS) beacons at Cape Henlopen, Delaware, (38° 46'36.406"N, 075° 05' 15.661"W) and Cape Henry, Virginia, (36°55'37.580"N, 076°00'23.884"W) were used to control this survey.

I. HYDROGRAPHIC POSITION CONTROL

DGPS was used as the method of positioning for all hydrographic data on this survey. The USCG Differential GPS beacons at Cape Henlopen, Delaware and Cape Henry, Virginia were used as the reference stations, in conjunction with a Starlink DNAV-212G, S/N 855, 12 channel DGPS receiver and 2 channel beacon receiver. This equipment met the accuracy standards for this 1:5,000 scale survey.

Performance checks were conducted periodically during the project by resting the launch alongside station CAL 2 1997 "(39°08'46.070"N, 076°27'29.443"W). The calibration point was established by measuring a single GPS baseline between a third-order, class I station and the calibration point. The computations for the CAL 2 1997 point is included in the "Survey Separates". Results of the performance checks are shown on the critical check form in the "Survey Separates". *DATA FILED WITH FIELD RECORDS*

Occasionally a good position misplotted on the raw track plot. This problem was attributed to good DGPS data following a period of questionable DGPS data. These positions were reviewed, then edited or rejected as necessary.

J. SHORELINE *SEE ALSO EVALUATION REPORT*

The shoreline source for this survey was Chart 12281. A cursory check of this charted shoreline was accomplished by comparing the ends of the lines of side scan sonar or hydrography as it junctions with shore. The only shoreline change noted was an area which had been recently filled at 39°15'37.55"N, 076°33'26.24"W. The change is shown on the Feature Plot for area 5 (refer to the Index to Plotter Sheets accompanying this survey for area numbering). This filled area should be charted on the next edition of 12281.

K. CROSSLINES

No crosslines were run because the configuration of the assigned small and/or narrow confined areas made crosslines impractical and of little worth.

L. JUNCTIONS

This survey does not junction with any contemporary surveys.

M. COMPARISON WITH PRIOR SURVEYS

The prior survey comparison will be performed by AHB.

N. ITEM INVESTIGATION REPORTS

There were no AWOIS Items assigned to this survey.

O. COMPARISON WITH THE CHART *SEE ALSO EVALUATION REPORT*

Comparisons were made with chart 12281, 47th Edition, April 18, 1998. The charted soundings and the survey soundings differ from 1 to 5 feet with the survey soundings generally deeper. Specific comparisons are made by plotter sheet area (refer to the Index of Plotter Sheets accompanying this survey).

Area 1 - Bethlehem Steel Corporation Ore Unloading Dock

Soundings in this area compare favorably with the chart. Agreement between this survey and charted soundings is 2 feet or less, with survey soundings being deeper. The only significant disagreements larger than this are a charted 40 foot sounding at Lat. 39.21160870, Lon. 076.48076952 which was surveyed at 44 feet and a charted 21 foot sounding at Lat. 39.21221739, Lon. 076.47448174, surveyed at 31 feet. The hydrographer recommends that soundings from this survey be charted. *CONCUR WITH CLASSIFICATION. INADEQUATE INVESTIGATION IN AREA*

Area 2 - Pier Slips South of Sleds Point

The area charted as 30 ft rep 1980, at Lat. 39.21544028, Lon. 076.57418659, was found to be 28 feet offshore sloping to 24 feet inshore. Surrounding depths are charted from 19 - 22 feet. *12 555 34 270 27 mllw*

~~IT IS RECOMMENDED THAT THE 30 FT BE CHANGED TO 19 FT. REF. 1998~~

*GMM
4-7-99*

Depths in the slip at Lat. 39.21333175, Lon. 76.57373325, were found ^{12' 47.9"} ~~2~~ feet deeper than charted. ^{34' 25.4"}

Depths along the charted wharf at Lat. 39.21082216, Lon. 76.57279118 all lie within the charted 30-foot depth curve, but were found to be ^{12' 38.9"} ~~32~~ ^{34' 22.0"} 33 - 36 feet. One sounding charted in this area, a 26 ft at Lat. 39.21112636, Lon. 76.57389300, was found to be 34 feet. ^{12' 40.0"} ^{34' 26.0"}

The hydrographer recommends that soundings from this survey be charted. *CONCUR*

Area 3 - Essex Industrial Chemicals Main Wharf

There are three soundings charted in this area, all of which agreed with the proximate surveyed soundings. *CONCUR* LAT 39°12'54", LONG 076°34'55" CHART PRESENT SURVEY DEPTHS

Area 4 - CSX Transportation Oil Pier

This area is charted as 36 FT 1979. Surveyed depths ranged from 47 feet offshore to 38 feet at the nearshore end of this maintained channel. The hydrographer recommends that soundings from this survey be charted. *IT IS RECOMMENDED THAT FURTHER INFORMATION BE OBTAINED FROM GROUP MAINTAINING CHANNEL BEFORE CHARTED DATA IS UPDATED* LAT 39°13'36", LONG 076°34'51"
DO NOT CONCUR

Area 5 - Consolidated Coal Sales Co. Piers (Eastern Half)

Depths found on this survey agreed with charted depths within 1 - 4 feet throughout most of this area. Notable exceptions are:

- A charted 14 foot shoal at Lat. 39.25864259, Lon. 76.55486887, now shows a least depth of ^{15' 31.1"} ~~23~~ ^{33' 17.5"} feet. ₁₉
- A charted 12 foot shoal at Lat. 39.25745319, Lon. 76.55773997, has receded slightly toward shore. ^{15' 27.2"} ^{33' 28"}

The hydrographer recommends that soundings from this survey be charted. *CONCUR*

Area 6 - Consolidated Coal Sales Co. Piers (Western Half)

Depths found on this survey agreed with charted depths within 1 - 3 feet throughout most of this area. Notable exceptions are shown in the table below:

Charted Depth	Charted Latitude	Charted Longitude	Survey Depth	Recommendation
22 ft	39.25486234	76.56228746	25 ¹⁵ 21 ¹⁷ ft	Chart Survey Sndgs
21 ft	39.25391720	76.56285319	23 ¹⁵ 25 ¹⁴ ft	Chart Survey Sndgs
29 ft	39.25631261	76.56465569	30 ¹⁵ 35 ²² - 31 ³¹ ft	Chart Survey Sndgs
20 ft	39.25833305	76.56425766	28 ¹⁵ 29 ³⁰ - 30 ft	Chart Survey Sndgs
23 ft	39.25608442	76.56329350	26 ¹⁵ 28 ²⁶ ft	Chart Survey Sndgs
24 ft	39.25921299	76.56056930	29 ¹⁵ 31 ³⁵ ft	Chart Survey Sndgs
19 ft	39.26032096	76.56069515	23 ¹⁶ 24 ³⁷ ft	Chart Survey Sndgs
15 ft	39.25634513	76.56107208	23 ¹⁵ ft	Chart Survey Sndgs

* ABOVE DISCUSSED CHARTED SOUNDINGS WERE NOT ADEQUATELY VERIFIED OR DISPROVED

The hydrographer recommends that soundings from this survey be charted. CONCUR RETAIN AS CHARTED
SEE ALSO SECTION 0.2 OF EVALUATION REPORT

Area 7 - Lazaretto Depot and Canton Pier

Survey soundings agree with charted soundings within two feet with two exceptions - a charted 25 ft sounding at Lat. 39.25927818, Lon. 76.57067071, showed depths of 28 - 29 feet on this survey and a charted 44 ft sounding at Lat. 39.26113569, Lon. 76.57276652, showed depths of 47 - 48 feet on this survey. The hydrographer recommends that soundings from this survey be charted. CONCUR

Area 8 - Petroleum Fuel and Terminal Co. Docks and Clinton Street Pier SEE ALSO EVALUATION REPORT

Survey soundings agree with charted soundings within two feet with two exceptions. A charted 33 ft sounding at Lat. 39.27038975, Lon. 76.57188715 was found to be 27 ft. This is not a danger to navigation since it is within a 30-foot depth curve, and surrounding charted depths are 23 - 27 feet. The hydrographer recommends that soundings from this survey be charted.

The other exception, the charted 24 ft sounding at Lat. 39.27123690, Lon. 76.57207581, was found to have depths of 29 to 30 feet in the area. The hydrographer recommends that soundings from this survey be charted. The hydrographer recommends that sounding data from this survey be used to update the chart. CONCUR SEE ALSO 0.1 OF E&A REPORT

Area 9 - Broadway Municipal and Recreation Piers

Only two soundings are charted in this area. Both agreed with the survey soundings within 2 feet. The hydrographer recommends that soundings from this survey be charted. *CONCUR CHART PRESENT SURVEY*

Soundings listed for all areas were corrected to MLLW using predicted tides.

P. ADEQUACY OF SURVEY *SEE ALSO EVALUATION REPORT*

This survey is complete and adequate to supersede all prior surveys within the common areas.

Q. AIDS TO NAVIGATION

No aids to navigation were located during the course of this survey

There were no bridges, ferry routes, pipelines or overhead power cables within the survey area.

R. STATISTICS

<u>Description</u>	<u>Quantity</u>
Total Number of Positions	1658
Total Lineal Nautical Miles of Hydrography	7.0
Total Lineal Nautical Miles of Side Scan Sonar	20.4
Square Nautical Miles Surveyed	1.0
Days of Production	9
Detached Positions	3
Bottom Samples	0
Tide Stations	1
Velocity Casts	4

S. MISCELLANEOUS

Forty-seven page size plots were created to portray the survey data. The survey was divided into nine areas to facilitate these plots. They are:

- Area 1 - Bethlehem Steel Corporation Ore Unloading Dock (vicinity of Sparrows Point)
- Area 2 - Pier Slips South of Sleds Point (Curtis Creek)
- Area 3 - Essex Industrial Chemicals Main Wharf (Curtis Creek - Cabin Branch)
- Area 4 - CSX Transportation Oil Pier (Curtis Creek)
- Area 5 - Consolidated Coal Sales Co. Piers (Eastern Half)
- Area 6 - Consolidated Coal Sales Co. Piers (Western Half)
- Area 7 - Lazaretto Depot and Canton Pier (Lazaretto Point)
- Area 8 - Petroleum Fuel and Terminal Co. Docks and Clinton Street Pier
- Area 9 - Broadway Municipal and Recreation Piers

An Index to Plotter Sheets is included which list the areas and types of plots included for each.

No anomalous currents or tides were observed during this survey.

No bottom samples were taken.

A complete list of all detached positions is included in the accordion file. It lists the position of each feature. *DATA FILED WITH FIELD RECORDS*

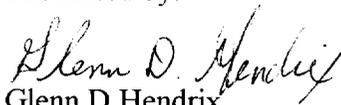
T. RECOMMENDATIONS *SEE ALSO SECTION P OF THE EVALUATION REPORT*

No additional field work was identified after field office processing was completed. Specific recommendations are made in section E., J., and O. of this report.

U. REFERRAL TO REPORTS

No reports or data are referred to in this Descriptive Report that are not included with this survey.

Submitted by:


Glenn D Hendrix
Launch Hydrographer-In-Charge

APPROVAL SHEET
Field Examination Survey

OPR-E346-AHP

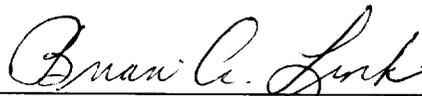
AHP-5-1-98

FE00438

1998

This field examination survey was conducted in accordance with the project instructions for OPR-E346-AHP, the Hydrographic Manual, the Hydrographic Survey Guidelines, and the Field Procedures Manual. All reports, records, and survey sheets were reviewed by the Launch Hydrographer-in-charge and the Chief of Party.

This survey is a complete field examination survey for the areas described in Section B of this report.



Brian A. Link
Chief, Atlantic Hydrographic Party



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: February 24, 1999

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-E346-AHP
HYDROGRAPHIC SHEET: F00438

LOCALITY: Chesapeake Bay, Baltimore Harbor, MD
TIME PERIOD: January 13, 1998 - May 20, 1998

TIDE STATION USED: 857-4680 Baltimore, MD
Lat. $39^{\circ} 16.0'N$ Lon. $76^{\circ} 34.7'W$
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.411 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: CB37.

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time.

Thomas V. Mero 2/24/99

CHIEF, REQUIREMENTS AND ENGINEERING BRANCH



Final tide zone node point locations for OPR-E346-AHP-97,
Sheet F00438.

Format: Longitude in decimal degrees (negative value denotes
Longitude West),
Latitude in decimal degrees
Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction

	Tide Station Order	AVG Time Correction	Range Correction
Zone CB37			
-76.718418 39.250542	857-4680	0	1.00
-76.592558 39.319574			
-76.473291 39.273454			
-76.466841 39.262422			
-76.447911 39.233027			
-76.433625 39.2307			
-76.43095 39.220036			
-76.443159 39.21037			
-76.442661 39.195916			
-76.483935 39.159399			
-76.491633 39.138219			
-76.501896 39.125643			
-76.588281 39.122333			
-76.718418 39.250542			

04/02/99

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: F00438

NUMBER OF CONTROL STATIONS		2
NUMBER OF POSITIONS		1658
NUMBER OF SOUNDINGS		1658
	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	0	02/09/99
VERIFICATION OF FIELD DATA	120	04/01/99
EVALUATION AND ANALYSIS	15	
FINAL INSPECTION	36	03/30/99
COMPILATION	25	04/01/99
TOTAL TIME	206	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		03/30/99

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR F00438 (1998)**

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.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

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

Hydrographic Processing System
NADCON, version 2.10
SiteWorks, version 2.01
MicroStation 95, version 5.05
I/RAS B, version 5.01

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

H. CONTROL STATIONS

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. Eight page size plots have been annotated with ticks showing the computed mean shift between NAD 83 and the North American Datum of 1927 (NAD 27).

To place these sheets on NAD 27, move the projection lines 0.388 seconds (11.969 meters or 2.40 mm at the scale of the survey) north in latitude, and 1.131 seconds (27.124 meters or 5.42 mm at the scale of the survey) east in longitude.

J. SHORELINE

Brown shoreline originates with National Ocean Service (NOS) chart 12281, 47th Edition, Apr.18/98, and is for orientation purposes only.

M. 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.

O. COMPARISON WITH CHART 12281 (47th Edition, Apr. 18/98)

Hydrography

The charted hydrography originates with the prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in sections J. and O. of the Descriptive Report. The following should be noted:

1) A charted pier, in the vicinity of Latitude 39°16'17.6"N, Longitude 76°34'19.5"W, appears to be longer than currently charted. This was discovered during office examination of side scan sonar records. A telephone call to the owners of the pier listed in the U.S. Army Corps of Engineers, Port Series No. 10, Revised 1991 found that the pier had been sold to Transcom, 410-732-0079. Phone calls to Transcom were not returned. It is recommended that the pier be retained as charted, and any revision should be made after researching any data that would confirm that the pier has been extended.

2) A shoreline change in the vicinity of Latitude 39°15'37.5"N, Longitude 76°33'27.0"W, was noted during field operations. This change was not delineated by the field unit. It is recommended that the shoreline be retained as charted and any subsequent shoreline information that reflects this change be used to update the chart.

3) A charted row of submerged piles, in the vicinity of Latitude 39°15'32.7"N, Longitude 76°33'16.5"W, was neither verified nor disproved by the present survey. No change in charting is recommended.

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

P. ADEQUACY OF SURVEY

This is an adequate hydrographic/side scan sonar survey. No additional work is recommended.

S. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic

F00438

Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

The following NOS Chart was used for compilation of the present survey:

12281 (47th Edition, Apr, 18/98)

Frank Saunders

Frank Saunders
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
F00438

Initial Approvals:

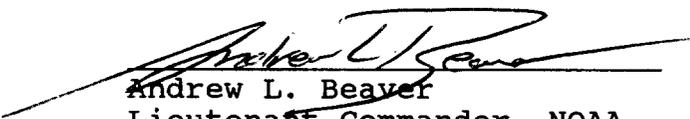
The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disapproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet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



Norris A Wike
Cartographer
Atlantic Hydrographic Branch

Date: 4/2/99

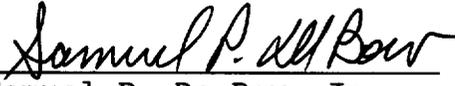
I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.



Andrew L. Beaver
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

Date: 4/2/99

Final Approval:

Approved: 

Samuel P. De Bow, Jr.
Commander, NOAA
Chief, Hydrographic Surveys Division

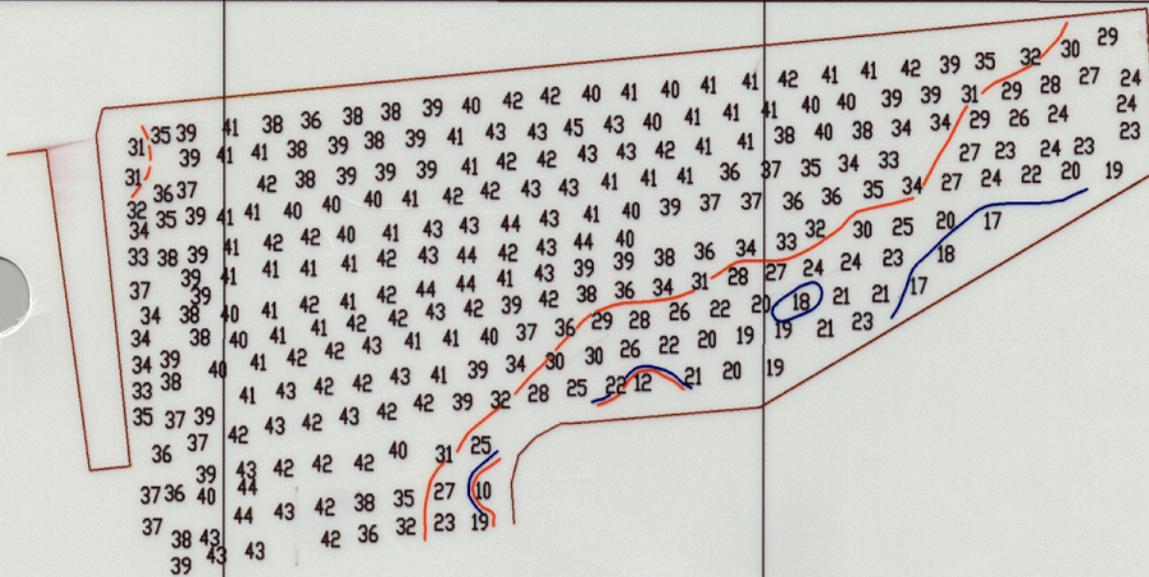
Date: 4/7/99.

76° 29' 00"

76° 28' 45"

76° 28' 30"

39° 12' 45"



076° 28' 45" W

NAD 27  39° 12' 30" N

39° 12' 30"

F00438
 MARYLAND
 CHESAPEAKE BAY
 BALTIMORE HARBOR
 JAN-MAY, 1998
 SCALE 1:5000
 HORIZONTAL DATUM: NAD 1983
 VERTICAL DATUM: SOUNDING IN FEET AT MLLW
 BETHLEHEM STEEL CORP ORE UNLOADING DOCK
 AREA 1
 SHEET 1 OF 8

CHECKED BY: FLS
 DATE 03/04/99

Brown shoreline originates with NOS chart 12281,
 47th Ed., Apr. 18/98 and is for orientation purposes only.

76° 29' 00"

76° 28' 45"

76° 28' 30"

76° 34' 30" 76° 34' 15" 76° 34' 00"

F00438
MARYLAND
CHESAPEAKE BAY
BALTIMORE HARBOR
JAN-MAY, 1998
SCALE 1:5000
HORIZONTAL DATUM: NAD 1983
VERTICAL DATUM: SOUNDING IN FEET AT MLLW
PIERS SLIPS-SOUTH OF SLEDDS POINT
AREA 2
SHEET 2 OF 8

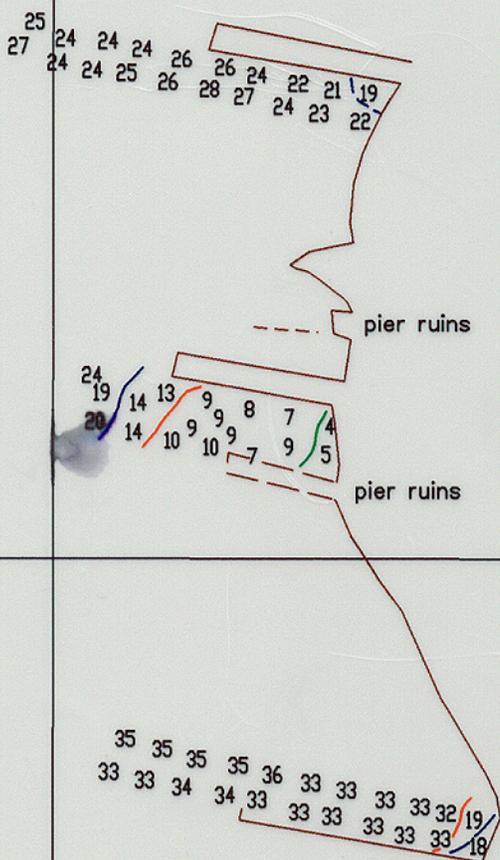
Brown shoreline originates with NOS chart 12281,
47th Ed., Apr. 18/98 and is for orientation purposes only.

076° 34' 15" W

39° 13' 00"

NAD 27  39° 13' 00" N

CHECKED BY: FLS
DATE 03/04/99



39° 12' 45"

76° 34' 30" 76° 34' 15" 39° 12' 30"

76° 35' 00"

76° 34' 45"

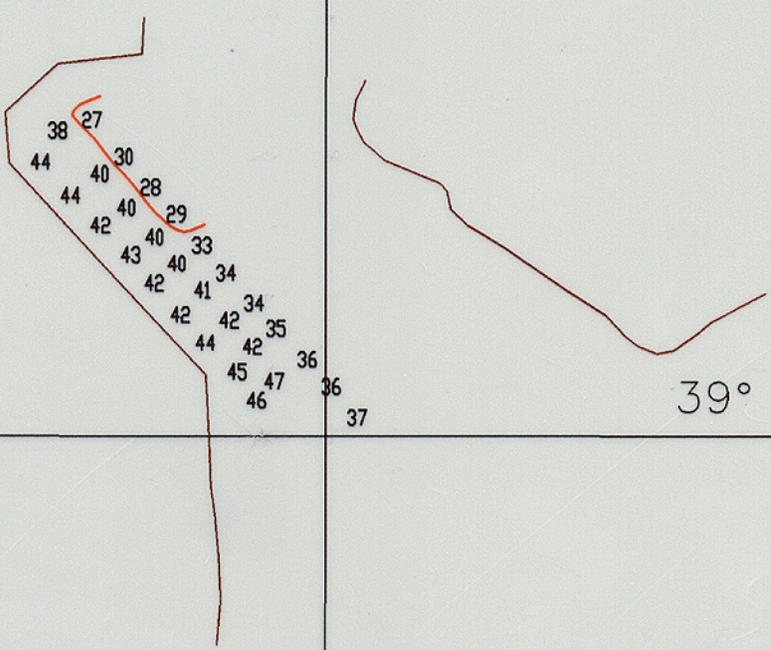
76° 34' 30"

076° 34' 45" W

NAD 27  39° 13' 45" N

39° 13' 45"

CHECKED BY: FLS
DATE 03/04/99



39° 13' 30"

F00438
 MARYLAND
 CHESAPEAKE BAY
 BALTIMORE HARBOR
 JAN-MAY, 1998
 SCALE 1:5000
 HORIZONTAL DATUM: NAD 1983
 VERTICAL DATUM: SOUNDING IN FEET AT MLLW
 CSX TRANSPORTATION OIL PIER
 AREA 4
 SHEET 3 OF 8

39° 13' 15"

Brown shoreline originates with NOS chart 12281, 47th Ed., Apr. 18/98 and is for orientation purposes only.

76° 35' 00"

76° 34' 45"

76° 35' 15"

76° 35' 00"

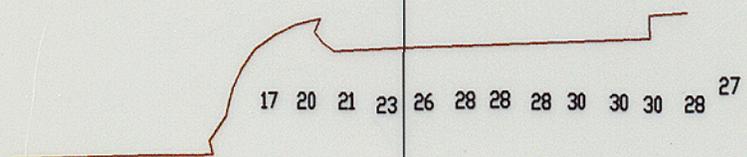
76° 34' 45"

39° 13' 15"

076° 34' 30" W

NAD 27 39° 13' 00" N

CHECKED BY: FLS
DATE 03/04/99



F00438
 MARYLAND
 CHESAPEAKE BAY
 BALTIMORE HARBOR
 JAN-MAY, 1998
 SCALE 1:5000
 HORIZONTAL DATUM: NAD 1983
 VERTICAL DATUM: SOUNDING IN FEET AT MLLW
 ESSEX CHEMICALS MAIN WHARF
 AREA 3
 SHEET 4 OF 8

39° 12' 45"

Brown shoreline originates with NOS chart 12281, 47th Ed., Apr. 18/98 and is for orientation purposes only.

76° 35' 15"

76° 35' 00"

76° 34' 45"

76° 34' 30"

76° 34' 15"

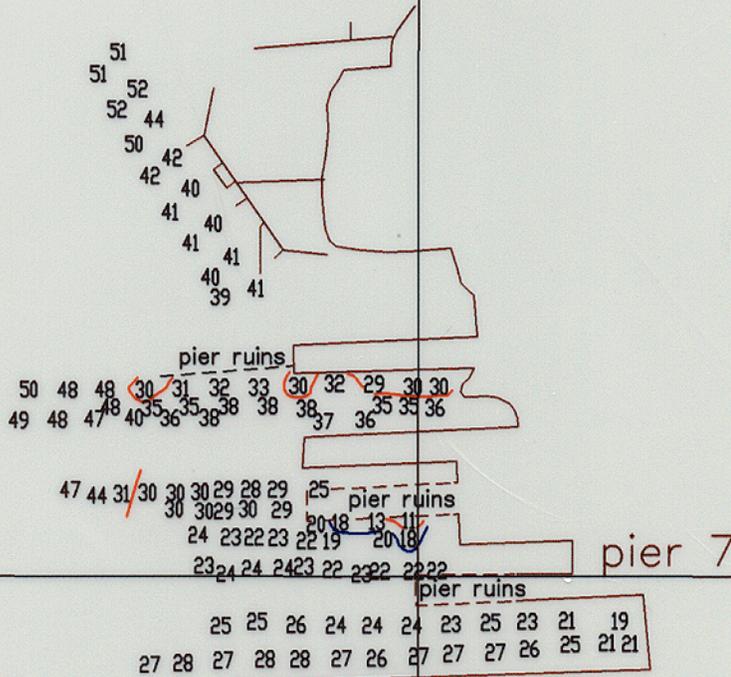
76° 34' 00"

076° 34' 15" W

NAD 27 39° 16' 30" N

39° 16' 30"

CHECKED BY: FLS
DATE 03/04/99



39° 16' 15"

F00438
MARYLAND
CHESAPEAKE BAY
BALTIMORE HARBOR
JAN-MAY, 1998
SCALE 1:5000
HORIZONTAL DATUM: NAD 1983
VERTICAL DATUM: SOUNDING IN FEET AT MLLW
PETROLEUM FUEL AND TERMINAL CO. DOCKS
CLINTON STREET PIER
AREA 8
SHEET 5 OF 8

Brown shoreline originates with NOS chart 12281,
47th Ed., Apr. 18/98 and is for orientation purposes only.
Shoreline broken to show soundings along piers

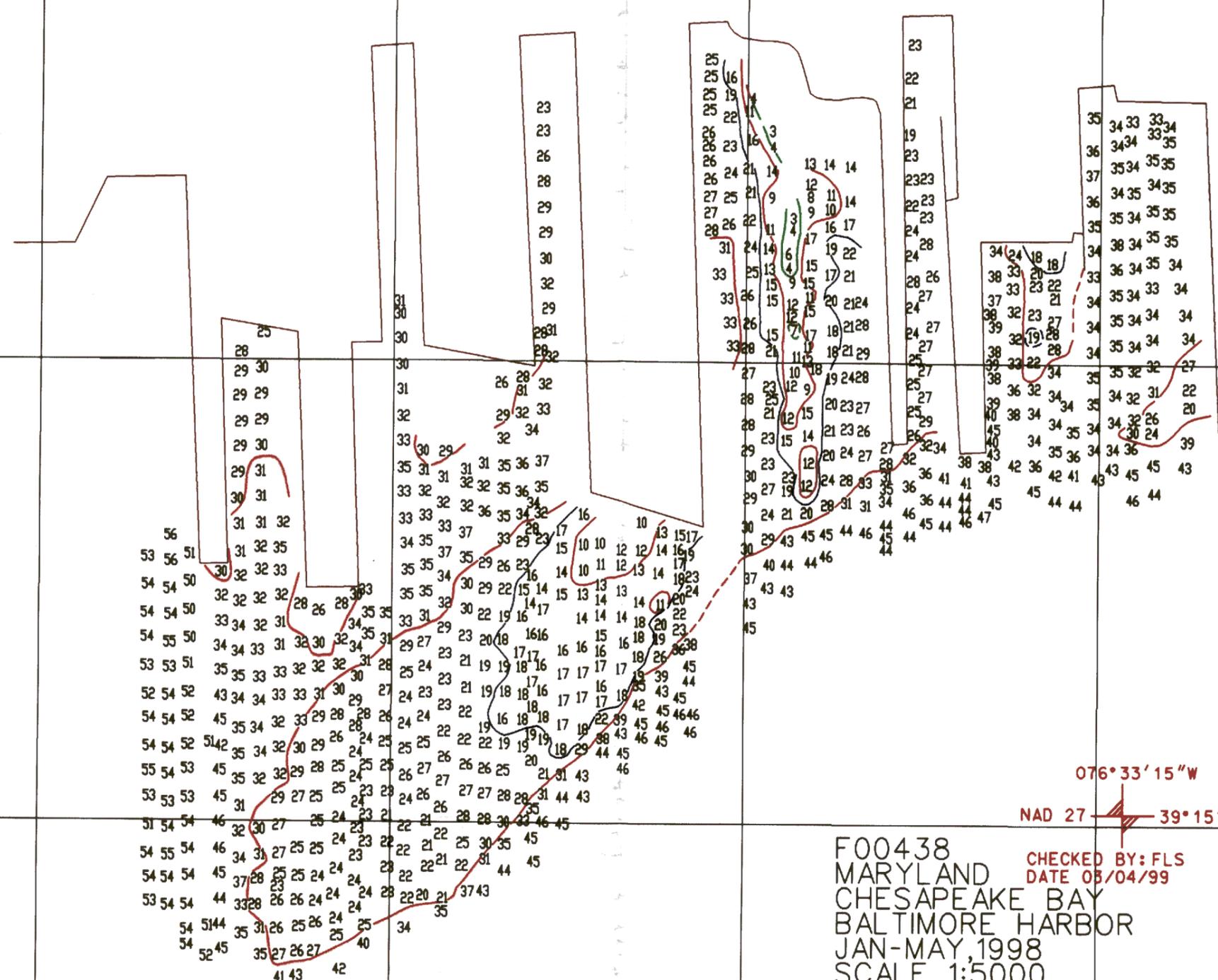
39° 16' 00"

76° 34' 30"

76° 34' 15"

76° 34' 00"

76° 34' 15" 76° 34' 00" 76° 33' 45" 76° 33' 30" 76° 33' 15" 76° 33' 00"
39° 15' 45"



39° 15' 30"

076° 33' 15" W
NAD 27 39° 15' 15" N

39° 15' 15"

F00438
MARYLAND
CHESAPEAKE BAY
BALTIMORE HARBOR
JAN-MAY, 1998
SCALE 1:5000
HORIZONTAL DATUM: NAD 1983
VERTICAL DATUM: SOUNDING IN FEET AT MLLW
CONSOLIDATED COAL SALES CO. PIERS
AREAS 5 AND 6
SHEET 6 OF 8

MLLW

Brown shoreline originates with NOS chart 12281,
47th Ed., Apr. 18/98 and is for orientation purposes only.

76° 34' 15" 76° 34' 00" 76° 33' 45" 76° 33' 30" 76° 33' 15" 76° 33' 00"

76° 34' 30"

76° 34' 15"

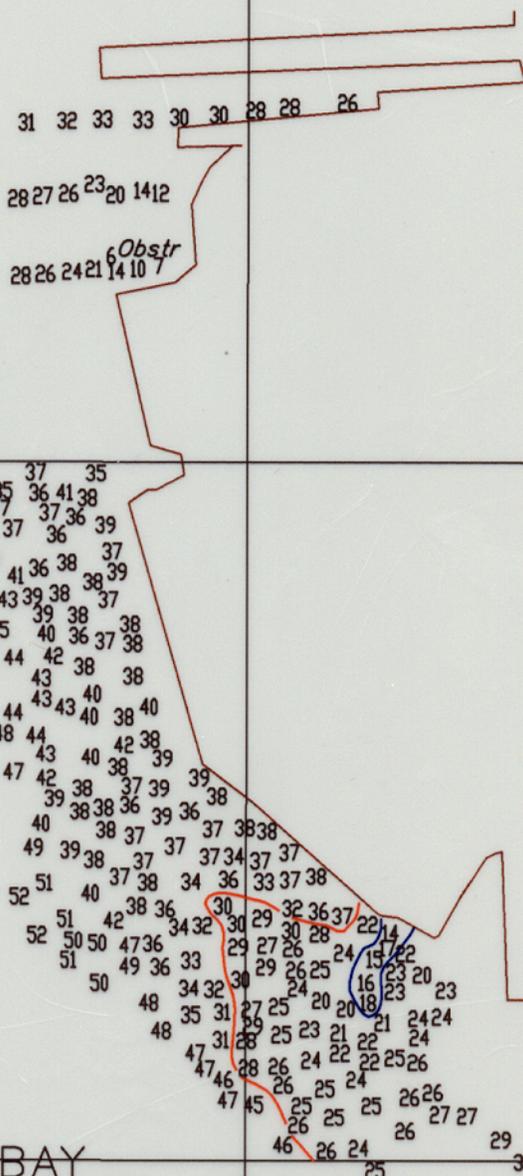
76° 34' 00"

076° 34' 15" W

NAD 27 39° 16' 00" N

39° 16' 00"

CHECKED BY: FLS
DATE 03/04/99



39° 15' 45"

F00438
 MARYLAND
 CHESAPEAKE BAY
 BALTIMORE HARBOR
 JAN-MAY, 1998
 SCALE 1:5000
 HORIZONTAL DATUM: NAD 1983
 VERTICAL DATUM: SOUNDING IN FEET AT MLLW
 LAZARETTO DEPOT AND CANTON PIER
 AREA 7
 SHEET 7 OF 8

39° 15' 30"

Brown shoreline originates with NOS chart 12281, 47th Ed., Apr. 18/98 and is for orientation purposes only.

76° 34' 30"

76° 34' 15"

76° 34' 00"

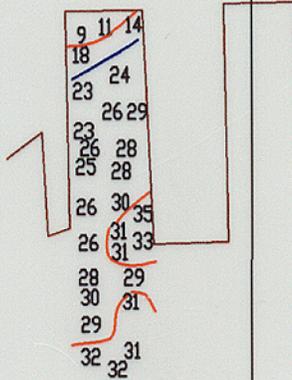
76° 35' 45"

76° 35' 30"

076° 35' 30" W

NAD 27 39° 17' 00" N 39° 17' 00"

CHECKED BY: FLS
DATE 03/04/99



39° 16' 45"

F00438
 MARYLAND
 CHESAPEAKE BAY
 BALTIMORE HARBOR
 JAN-MAY, 1998
 SCALE 1:5000
 HORIZONTAL DATUM: NAD 1983
 VERTICAL DATUM: SOUNDING IN FEET AT MLLW
 BROADWAY MUNICIPAL AND RECREATION PIERS
 AREA 9
 SHEET 8 OF 8

Brown shoreline originates with NOS chart 12281,
 47th Ed., Apr. 18/98 and is for orientation purposes only.

39° 16' 30"

76° 35' 45"

76° 35' 30"

