

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

Type of Survey .....

Field No. ....

Registry No. ....

### LOCALITY

State .....

General Locality .....

Sublocality .....

\_\_\_\_\_  
\_\_\_\_\_  
CHIEF OF PARTY

### LIBRARY & ARCHIVES

DATE .....

### HYDROGRAPHIC TITLE SHEET

**F00515**

**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.

State           Maryland          

General Locality           Baltimore Harbor          

Sub-Locality           Baltimore Inner Harbor and Patapsco River Pier Ruins          

Scale           1:5000           Date of Survey           March 20-23, 2006          

Instructions dated           March 17, 2006           Project No.           S-E906-BH-06          

Vessel           BAY HYDROGRAPHER          

Chief of Party           LT(jg) Brianna Welton          

Surveyed by           BAY HYDROGRAPHER Personnel          

Soundings by echo sounder, hand lead, pole           Reson Seabat 8125          

Graphic record scaled by           BAY HYDROGRAPHER Personnel          

Graphic record checked by           BAY HYDROGRAPHER Personnel           Automated Plot           N/A          

Verification by           Atlantic Hydrographic Branch          

Soundings in           fathoms feet at MLW MLLW           ~~Meters~~ at MLLW           Feet          

REMARKS:           All times in UTC          

          All soundings corrected with verified tides and Final Zoning          

          Map Projection is UTM zone 18

**Descriptive Report to Accompany Hydrographic Survey F00515**

Project S-E906-BH-06

Patapsco River Pier Ruins and Inner Harbor, Pier 4

Scale 1:5,000

March-April 2006

**NOAA S/V Bay Hydrographer**

Chief of Party: LT(jg) Briana Welton, NOAA

**A. AREA SURVEYED**

This field examination (FE) was completed as specified by Hydrographic Survey Letter Instructions S-E906-BH-06, dated March 16, 2006, Standing Project Instructions dated March 23, 2004, and NOS Hydrographic Specifications and Deliverables dated March 5, 2003, with the exception of deviations noted in this report. The survey area is Baltimore Inner Harbor and Patapsco River Pier Ruins. Project S-E906-BH-06 responds to a request from the NOAAAS THOMAS JEFFERSON for reconnaissance of the Inner Harbor for their in-port in Baltimore for the 2006 Volvo Ocean Race, and by the Baltimore Pilots Association after they received a report of a tug boat striking the charted ruins west of pier 13.

One hundred percent multi-beam echosounder (MBES) and 200 percent sidescan (SSS) coverage were obtained in Baltimore Inner Harbor within the survey limits. Only a few SSS passes were obtained on each side of the Patapsco River Pier Ruins due to safety concerns. Multibeam crosslines were not acquired due to time constraints.

*Since no bathymetry was collected in the vicinity of Patapsco River Pier Ruins but side scan sonar revealed charted ruins, the item is blue-noted with the recommendation that it be retained as charted.*

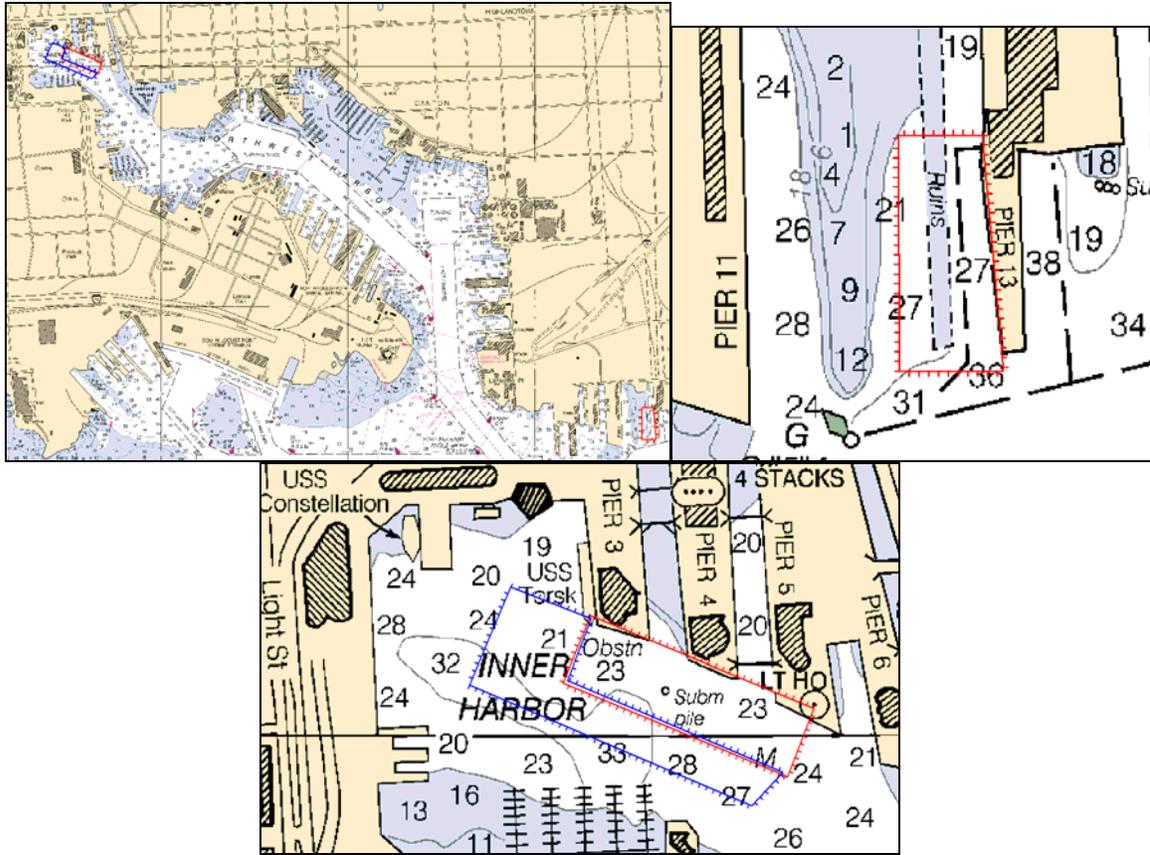


Figure 1: F00515 Survey Limits (Chart 12281)

## B. DATA ACQUISITION AND PROCESSING

### B1. Equipment and Vessels

BAY HYDROGRAPHER acquired all data. The Reson 7125 was removed and replaced with the Reson 8125 due to functionality problems exhibited by the Reson 7125 at the immediate start of the survey. Due to the time constraints caused by this circumstance, the Reson 8125 was calibrated (“patched”) in the Patuxent River near Solomons, MD, shortly after BAY HYDROGRAPHER departed the survey area. No other unusual vessel configurations were used. **OK**

### B2. Quality Control

#### Crosslines

Crosslines were not acquired due to time constraints. All contacts developed with MBES meet NOAA specifications for horizontal and vertical accuracy. ***Do not concur. Total distance of multibeam mainscheme lines was approximately 4 nmi. Crosslines would have been composed of 0.2 nmi or 360 meters. Crosslines could have been obtained in a matter of minutes.***

#### Junctions

Data from F00515 junctions with F00505 on the eastern side of the Inner Harbor (see Figure 2). Field Examination F00505 was completed by BAY HYDROGRAPHER in the fall of 2005. Multibeam data from both FEs were compared in Caris subset mode. This comparison revealed no discrepancy between depths observed in 2005 and 2006 where junctions occur.

**OK**

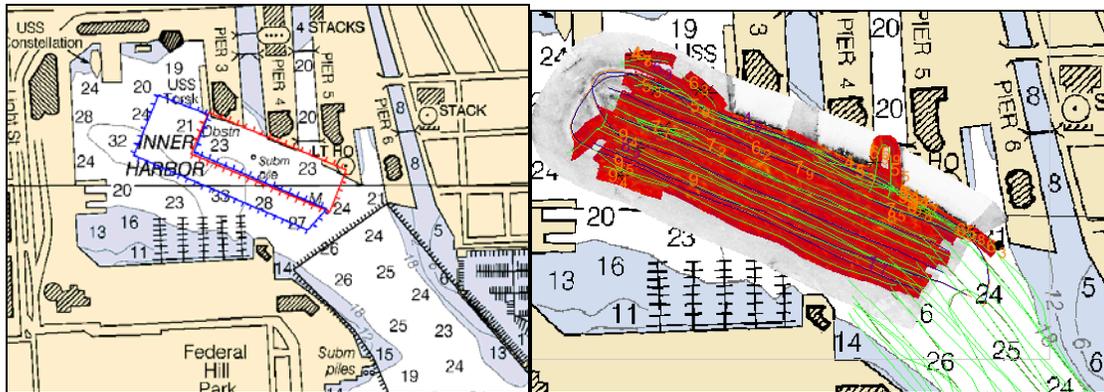


Figure 2: Survey Junction between F00515 and F00505 in Baltimore Inner Harbor (Chart 12281)

## Data Quality Factors

Individual side scan contacts developed with the SWMB appear twice in the bathymetry due to an unresolved horizontal offset on the order of 0.5 meters. This offset was not investigated further because the offsets are not outside the horizontal accuracy requirements set forth in the NOAA Specifications and Deliverables and because the Reson 8125 was removed and replaced with the Reson 7125 shortly after leaving the survey area. Figure 3 is an example of the horizontal offset discussed in this section. *Concur.*

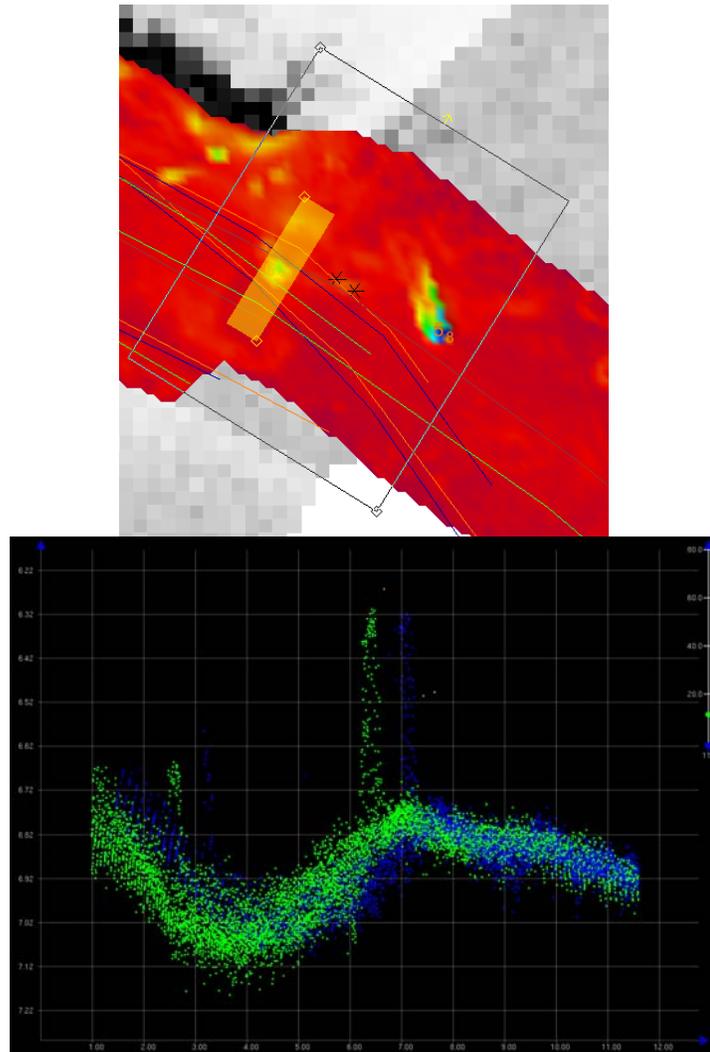


Figure 3: Example of 0.5-meter horizontal offset observed in SWMB data

Data from a single sound velocity cast conducted on DN 079 were applied to the SWMB data acquired on both DN 079 and DN 082. The line on the Seabird 19-Plus Profiler parted during the second cast on DN 079, rendering BAY HYDROGRAPHER without a CTD for the remainder of the survey. On DN 082, a spare Odom Digibar surface sound-velocimeter was

lowered to the bottom of the seafloor in the Inner Harbor for comparison with the CTD values obtained on DN 079. Since the CTD values agreed within less than one meter per second with the surface sound-velocimeter values, the single CTD cast from DN 079 was applied to SWMD data acquired on both days. *Concur.*

### B3. Data Reduction

Data reduction procedures for survey F00515 conform to those detailed in the S-E906-BH-06 DAPR. *2006 DAPR on file at AHB.*

### B4. Data Representation

Two field sheets are submitted with F00515, one for Patapsco River Pier Ruins and one for Baltimore Inner Harbor in accordance with NOAA Specifications and Deliverables dated June 2006. Multiple field sheets for each area were not necessary due to the small size of each area. Though many CUBE surfaces were used for the processing of F00515, the final submission is shown in Figure 4. The submission field sheets have fewer than  $25 \times 10^6$  nodes.

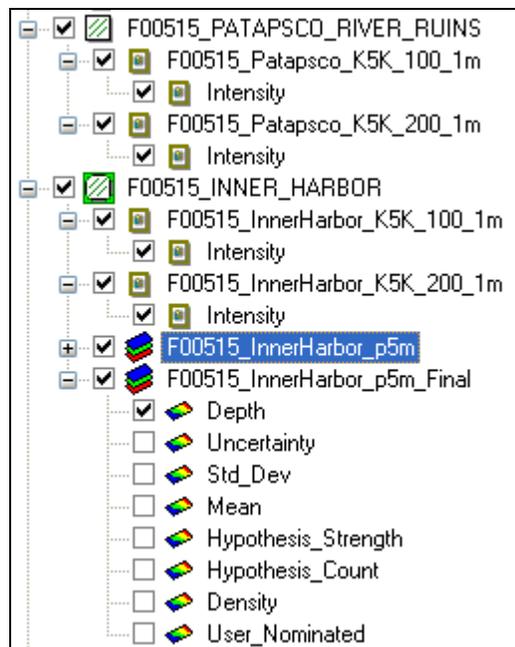


Figure 4: Field sheets and surfaces submitted with F00515

*Due to the shallow depths (14 – 30+ feet), a 1-meter CUBE (shallow) surface was created by AHB and used in the compilation process.*

## C. VERTICAL AND HORIZONTAL CONTROL

Project S-E906-BH-06 required neither horizontal control work or subordinate tide station installation and thus no Horizontal and Vertical Control Report is submitted. ***No HVCR is on file for the Bay Hydrographer 2006 field season.***

### Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. The differential corrector beacons utilized for this survey are given in Table 2. ***UTM Zone 18.***

Location	Frequency	Custodian	Range	Priority
Annapolis	303 kHz	USCG	250nm	Primary

Table 2: Differential Corrector Sources for F00515.

### Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide station at Baltimore, MD (857-4680) served as control for datum determination and as the primary source for water level reducers for survey F00515.

All data were reduced to MLLW using final approved water levels from Baltimore, MD (857-4680), using the tide file 8574680.tid and final time and height correctors using the zone correction file E906TJ2006CORP.zdf. ***Concur with Clarification. Tide note from CO-OPS specifically stated that preliminary zoning was accepted as the final zoning – 14 April 2006.***

This documentation is included in Appendix IV.

## D. RESULTS AND RECOMMENDATIONS

### D.1. Chart Comparison

#### D.1.a. Survey Agreement with Chart

Field Examination F00515 was compared with the following charts:

Chart	Scale	Edition and Date	Latest Notice to Mariners Applied
12281	1:15,000	50 <sup>th</sup> Ed, Nov 2004	January 27, 2007

Table 3: Charts compared with F00515

A significant quantity of debris was identified in the side scan data in the area of investigation charted as “Ruins” near Pier 13 in the Patapsco River north of Seagirt Marine Terminal. The hydrographer recommends that the ruins be retained as charted. ***Concur. Ruins are addressed in Blue Note.***



accuracy standards and bottom coverage requirements have been met and survey data are adequate to supersede charted data in their common areas. *Concur.*

### **D.1.b. Dangers to Navigation**

Seven (7) Dangers to Navigation (DTONs) were found on survey F00515, and reported to the Marine Chart Division via email in four (4) separate reports on the following dates:

- F00515\_ANTI\_DTON\_REPORT\_1 (3/21/06)
- F00515\_DTON\_REPORT\_1 (4/11/06)
- F00515\_DTON\_REPORT\_2 (6/14/06)
- F00515\_DTON\_REPORT\_3 (6/16/06)

The original DTON report packages are included in Appendix I. Descriptions of each DTON are included in the Survey Feature Report in Appendix II.

### **D.1.c. Other Features**

#### Automated Wreck and Obstruction Information System (AWOIS) Investigations

Two (2) AWOIS items fall the within the limits of F00515. Descriptions of each AWOIS item investigation are included in the Survey Feature Report in Appendix II.

### **D.2. Additional Results**

#### **D.2.a. Prior Survey Comparison**

Prior survey comparison with F00515 was not performed.

#### **D.2.b. Shoreline Verification**

Shoreline verification was not performed for F00515.

#### **D.2.c. Aids to Navigation**

There are no Aids to Navigation within the limits of F00515.

#### **D.2.d. Overhead features**

There are no overhead features in F00515.

#### **D.2.e. Submarine Cables and Pipelines**

There are no submarine cables or pipelines in F00515.

#### **D.2.f. Ferry Routes**

There are no ferry routes in F00515.

**D.2.g. Bottom Samples**

Bottom samples were not performed in F00515.

**D.2.h Miscellaneous**

**E. ADDITIONAL DOCUMENTATION**

All additional supporting information for F00515 is submitted with this document.



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
S/V Bay Hydrographer  
Norfolk, VA 23510

MEMORANDUM FOR: CDR Tod Schattgen, NOAA  
Chief, Atlantic Hydrographic Branch

FROM: LT(jg) Briana Welton, NOAA  
Officer in Charge  
NOAA S/V Bay Hydrographer (s5501)

DATE: February 23, 2007

TITLE: Approval of Hydrographic Field Investigation F00515

Field operations for hydrographic field investigation F00515 were conducted under my supervision with frequent personal checks of progress and adequacy. I have completed and reviewed the attached survey data and reports. The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required. All data and reports are respectfully submitted to Atlantic Hydrographic Branch.

The documents listed below are submitted within this .pdf and contain information relevant to F00515:

1. Descriptive Report Cover Page
2. Hydrographic Survey Title Sheet
3. Descriptive Report Cover Sheet
4. Descriptive Report for F00515
  - o Appendices
    - I. F00515 DTON Reports
    - II. F00515 Feature Report
    - III. Final Progress Sketch and Survey Outline
    - IV. Final, Approved Water Levels
    - V. Supplemental Survey Records and Correspondence

## APPENDIX I

### Original Dangers to Navigation Reports

# F00515 ANTI-DTON REPORT

**Registry Number:** F00515  
**State:** MD  
**Locality:** BALTIMORE HARBOR  
**Sub-locality:** INNER HARBOR PIER 3 4  
**Project Number:** S-E906-BH-06  
**Survey Date:** 03/20/2006

REMOVE CHARTED (12281) SUBM PILE.

## Charts Affected

Number	Version	Date	Scale
12281	50th Ed.	11/01/2004	1:15000
12278	74th Ed.	01/01/2005	1:40000
12273	55th Ed.	05/01/2004	1:80000
12280	5th Ed.	10/01/2004	1:200000
13003	48th Ed.	10/01/2004	1:1200000

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	2986/223	Pile	7.86 m	039° 17' 01.893" N	76° 36' 27.140" W	---

## **1 - Danger To Navigation**

**1.1) Profile/Beam - 2986/223 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 810\_2024**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 039° 17' 01.893" N, 76° 36' 27.140" W  
**Least Depth:** 7.86 m  
**Timestamp:** 2006-079.20:26:49.398 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 810\_2024  
**Profile/Beam:** 2986/223  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

REQUEST FOR CHARTED FEATURE REMOVAL.  
 REMOVE CHARTED (12281) SUMB PILE. DISPROVED WITH 200% SIDESCAN AND 100% MULTIBEAM. COVERAGE AREA 72 x 400 METERS.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/810_2024	2986/223	0.00	000.0	Primary

**Hydrographer Recommendations**

REMOVE CHARTED (12281) SUMB PILE.

**Cartographically-Rounded Depth (Affected Charts):**

26ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)  
 4 ¼fm (13003\_1)

**S-57 Data**

[None]

# F00515 DTON REPORT

**Registry Number:** F00515  
**State:** MD  
**Locality:** BALTIMORE HARBOR  
**Sub-locality:** PATAPSCO RIVER PIER RUINS AND INNER HARBOR, PIERS 3 AND 4  
**Project Number:** S-E906-BH-06  
**Survey Date:** 03/20/2006

SHOAL SOUNDING (CHD 12281)

## Charts Affected

Number	Version	Date	Scale
12281	50th Ed.	11/01/2004	1:15000
12278	74th Ed.	01/01/2005	1:40000
12273	55th Ed.	05/01/2004	1:80000
12280	5th Ed.	10/01/2004	1:200000
13003	48th Ed.	10/01/2004	1:1200000

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	322/222	Obstruction	5.31 m	039° 17' 05.265" N	76° 36' 35.603" W	---

## **1 - Danger To Navigation**

## 1.1) Profile/Beam - 322/222 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 811\_2011

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 039° 17' 05.265" N, 76° 36' 35.603" W  
**Least Depth:** 5.31 m  
**Timestamp:** 2006-079.20:11:39.767 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 811\_2011  
**Profile/Beam:** 322/222  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

SOUNDING OVER UNIDENTIFIED OBSTRUCTION

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/811_2011	322/222	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss200/2006-079/200_1529	0002	3.91	149.8	Secondary
f00515/bh_s5501_klein5000_sss200/2006-079/202_1521	0003	6.99	292.8	Secondary

#### Hydrographer Recommendations

UPDATE CHD (12281) DEPTH

#### Cartographically-Rounded Depth (Affected Charts):

17ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ¾fm (13003\_1)

#### S-57 Data

[None]

# F00515 DTON REPORT #2

**Registry Number:** F00515  
**State:** MD  
**Locality:** BALTIMORE HARBOR  
**Sub-locality:** PATAPSCO RIVER PIER RUINS AND INNER HARBOR, PIERS 3 AND 4  
**Project Number:** S-E906-BH-06  
**Survey Date:** 03/23/2006

TWO SHOAL OBJECTS IN BALTIMORE INNER HARBOR

## Charts Affected

Number	Version	Date	Scale
12281	50th Ed.	11/01/2004	1:15000
12278	74th Ed.	01/01/2005	1:40000
12273	55th Ed.	05/01/2004	1:80000
12280	5th Ed.	10/01/2004	1:200000
13003	48th Ed.	10/01/2004	1:1200000

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	572/169	Obstruction	5.81 m	039° 16' 59.230" N	76° 36' 17.647" W	---
1.2	1566/147	Obstruction	4.72 m	039° 17' 06.628" N	76° 36' 36.204" W	---

## **1 - Danger To Navigation**

## 1.1) Profile/Beam - 572/169 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 039° 16' 59.230" N, 76° 36' 17.647" W  
**Least Depth:** 5.81 m  
**Timestamp:** 2006-082.19:03:05.811 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902  
**Profile/Beam:** 572/169  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

OBJECT DETECTED IN 100% SWMB COVERAGE AND TWO SIDE SSS PASSES. ONE DIVE INDICATED ONE UNIDENTIFIED WOODEN OBSTRUCTION. POSSIBLE RUDDER OR DREDGE GATE.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/021_1902	572/169	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss100/2006-079/100_1506	0001	6.84	113.8	Secondary
f00515/bh_s5501_klein5000_sss200/2006-079/200_1529	0001	8.39	115.4	Secondary

#### Hydrographer Recommendations

CHART LEAST DEPTH.

#### Cartographically-Rounded Depth (Affected Charts):

19ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

3fm (13003\_1)

#### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** INFORM - WOODEN OBJECT  
 QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

VALSOU - 5.808 m

WATLEV - 3:always under water/submerged

## 1.2) Profile/Beam - 1566/147 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 402\_1711

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 039° 17' 06.628" N, 76° 36' 36.204" W  
**Least Depth:** 4.72 m  
**Timestamp:** 2006-082.17:12:36.853 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 402\_1711  
**Profile/Beam:** 1566/147  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

SHOAL SOUNDING

100% SWMB COVERAGE. APPEARS IN TWO SSS RECORDS.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/402_1711	1566/147	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss200/2006-079/202_1521	0004	9.35	275.5	Secondary
f00515/bh_s5501_klein5000_sss200/2006-079/203_1537	0001	9.44	091.0	Secondary

#### Hydrographer Recommendations

CHART SHOAL SOUNDING

#### Cartographically-Rounded Depth (Affected Charts):

15ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ½fm (13003\_1)

#### S-57 Data

[None]

# F00515 DTON REPORT #3

**Registry Number:** F00515  
**State:** MD  
**Locality:** BALTIMORE HARBOR  
**Sub-locality:** PATAPSCO RIVER PIER RUINS AND INNER HARBOR, PIERS 3 AND 4  
**Project Number:** S-E906-BH-06  
**Survey Dates:** 03/20/2006 - 03/23/2006

SHOALING AT THE FACE OF PIERS 3, 4, 5 IN BALTIMORE INNER HARBOR

## Charts Affected

Number	Version	Date	Scale
12281	50th Ed.	11/01/2004	1:15000
12278	74th Ed.	01/01/2005	1:40000
12273	55th Ed.	05/01/2004	1:80000
12280	5th Ed.	10/01/2004	1:200000
13003	48th Ed.	10/01/2004	1:1200000

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	3950/231	Sounding	4.61 m	039° 17' 03.922" N	76° 36' 30.040" W	---
1.2	1947/203	Sounding	4.71 m	039° 17' 00.514" N	76° 36' 20.222" W	---
1.3	1575/217	Sounding	4.37 m	039° 17' 02.165" N	76° 36' 24.385" W	---

## **1 - Danger To Navigation**

## 1.1) Profile/Beam - 3950/231 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 039° 17' 03.922" N, 76° 36' 30.040" W  
**Least Depth:** 4.61 m  
**Timestamp:** 2006-079.20:20:55.047 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018  
**Profile/Beam:** 3950/231  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

DEPTHS AT PIER FACE SHOALER THAN NEAREST CHARTED SOUNDING

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/812_2018	3950/231	0.00	000.0	Primary

#### Hydrographer Recommendations

CHART 18-FT DEPTH CONTOUR AT PIER FACE

#### Cartographically-Rounded Depth (Affected Charts):

15ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ½fm (13003\_1)

#### S-57 Data

[None]

## 1.2) Profile/Beam - 1947/203 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 039° 17' 00.514" N, 76° 36' 20.222" W  
**Least Depth:** 4.71 m  
**Timestamp:** 2006-082.19:03:59.357 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902  
**Profile/Beam:** 1947/203  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

DEPTHS AT PIER FACE SHOALER THAN NEAREST CHARTED DEPTH

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/021_1902	1947/203	0.00	000.0	Primary

#### Hydrographer Recommendations

CHART 18-FT DEPTH CONTOUR AT PIER FACE

#### Cartographically-Rounded Depth (Affected Charts):

15ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ½fm (13003\_1)

#### S-57 Data

[None]

### 1.3) Profile/Beam - 1575/217 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 400\_1848

## DANGER TO NAVIGATION

### Survey Summary

**Survey Position:** 039° 17' 02.165" N, 76° 36' 24.385" W  
**Least Depth:** 4.37 m  
**Timestamp:** 2006-082.18:49:42.636 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 400\_1848  
**Profile/Beam:** 1575/217  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

DEPTHS AT PIER FACE SHOALER THAN NEAREST CHARTED SOUNDING

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/400_1848	1575/217	0.00	000.0	Primary

### Hydrographer Recommendations

CHART 18-FT DEPTH CONTOUR AT PIER FACE

#### Cartographically-Rounded Depth (Affected Charts):

14ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ¼fm (13003\_1)

### S-57 Data

[None]

## APPENDIX II

### AHB QC Features

# F00515 Feature Report

**Registry Number:** F00515

**State:**

**Locality:** BALTIMORE HARBOR

**Sub-locality:** PATAPSCO RIVER PIER RUINS AND INNER HARBOR, PIERS 3 AND 4

**Project Number:** S-E906-BH-06

**Survey Dates:** 03/20/2006 - 03/23/2006

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12281	51st	02/01/2007	1:15,000 (12281_1)	USCG LNM: 05/06/2008 (05/27/2008) NGA NTM: 07/09/2005 (06/07/2008)
12278	74th	01/01/2005	1:40,000 (12278_1)	[L]NTM: ?
12273	55th	05/01/2004	1:80,000 (12273_1)	[L]NTM: ?
12280	5th	10/01/2004	1:200,000 (12280_1)	[L]NTM: ?
13003	48th	10/01/2004	1:1,200,000 (13003_1)	[L]NTM: ?

\* Correction(s) - source: last correction applied (last correction reviewed--"cleared date")

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	0001 Retain as Charted	SSS	[None]	39° 15' 27.3" N	076° 33' 23.2" W	---
1.2	0002 Retain as Charted	SSS	[None]	39° 15' 27.5" N	076° 33' 23.0" W	---
1.3	0001 Retain as Charted	SSS	[None]	39° 15' 27.9" N	076° 33' 23.9" W	---
1.4	3489/155 Disregard	Sounding	9.46 m	39° 17' 02.0" N	076° 36' 37.1" W	---
1.5	221/41 Pile	Pile	8.52 m	39° 17' 02.7" N	076° 36' 36.7" W	---
1.6	483/91 insignificant	Sounding	7.72 m	39° 17' 03.5" N	076° 36' 35.0" W	---
1.7	1548/55 AWOIS 9540	Obstruction	6.24 m	39° 17' 02.7" N	076° 36' 29.5" W	9540
1.8	322/222 DtoN submitted by field	Obstruction	5.31 m	39° 17' 05.3" N	076° 36' 35.6" W	---
1.9	3950/231 Submitted as DtoN by field	Obstruction	4.61 m	39° 17' 03.9" N	076° 36' 30.0" W	---
1.10	4818/11	Sounding	5.92 m	39° 17' 04.4" N	076° 36' 32.9" W	---
1.11	5726/231	Sounding	5.87 m	39° 17' 06.0" N	076° 36' 35.0" W	---
1.12	644/206 Obstruction	Obstruction	4.38 m	39° 17' 00.7" N	076° 36' 20.7" W	---

1.13	3939/240 Obstruction	Obstruction	4.32 m	39° 17' 03.9" N	076° 36' 30.0" W	---
1.14	572/169 Chart Updated through DtoN	Obstruction	5.81 m	39° 16' 59.2" N	076° 36' 17.6" W	---
1.15	1947/203 Submitted as DtoN by field	Obstruction	4.71 m	39° 17' 00.5" N	076° 36' 20.2" W	---
1.16	768/86 Insignificant	Sounding	6.26 m	39° 16' 59.4" N	076° 36' 18.2" W	---
1.17	26/217 Insignificant	Sounding	6.33 m	39° 16' 58.7" N	076° 36' 16.5" W	---
1.18	1264/7 Insignificant	Pile	5.31 m	39° 17' 01.8" N	076° 36' 23.8" W	---
1.19	1575/217 obstruction (was a DtoN submitted by field)	Sounding	4.37 m	39° 17' 02.2" N	076° 36' 24.4" W	---
1.20	2986/223 AWOIS 9539 Disproval Anti-DtoN	Pile	7.86 m	39° 17' 01.9" N	076° 36' 27.1" W	9539
1.21	1566/147 presently charted DtoN	Obstruction	4.72 m	39° 17' 06.6" N	076° 36' 36.2" W	---
1.22	655/9 Insignificant	Sounding	9.04 m	39° 17' 01.4" N	076° 36' 33.2" W	---
1.23	2314/41 Insignificant	Sounding	7.74 m	39° 16' 57.9" N	076° 36' 23.0" W	---
1.24	3070/1 Insignificant	Sounding	7.17 m	39° 17' 02.8" N	076° 36' 32.0" W	---
1.25	2503/22 Insignificant	Sounding	6.25 m	39° 17' 02.6" N	076° 36' 23.0" W	---
1.26	1141/16 Insignificant	Sounding	5.91 m	39° 17' 02.6" N	076° 36' 22.4" W	---
1.27	317/189 Insignificant	Sounding	9.36 m	39° 17' 01.4" N	076° 36' 37.4" W	---
1.28	751/144 Insignificant	Sounding	6.28 m	39° 17' 05.4" N	076° 36' 33.0" W	---
1.29	1012/218 Insignificant	Sounding	5.92 m	39° 17' 05.8" N	076° 36' 33.3" W	---

**1 - Office QC**

## 1.1) Contact/Point - 0001/1 from f00515 / bh\_s5501\_klein5000\_sss100 / 2006-079 / 102\_1612

### Survey Summary

**Survey Position:** 39° 15' 27.3" N, 076° 33' 23.2" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2006-079.04:58:45 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_klein5000\_sss100 / 2006-079 / 102\_1612  
**Contact/Point:** 0001/1  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

PIER RUINS UNABLE TO SAFELY OBTAIN MULTIBEAM COVERAGE DUE TO EXISTENCE OF RUINS

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_klein5000_sss100/2006-079/102_1612	0001	0.00	000.0	Primary

### Hydrographer Recommendations

RETAIN AS CHARTED

### S-57 Data

[None]

### Office Notes

Concur.

## 1.2) Contact/Point - 0002/1 from f00515 / bh\_s5501\_klein5000\_sss100 / 2006-079 / 102\_1612

### Survey Summary

**Survey Position:** 39° 15' 27.5" N, 076° 33' 23.0" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2006-079.04:59:41 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_klein5000\_sss100 / 2006-079 / 102\_1612  
**Contact/Point:** 0002/1  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

PIER RUINS UNABLE TO SAFELY OBTAIN MULTIBEAM COVERAGE DUE TO EXISTENCE OF RUINS

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_klein5000_sss100/2006-079/102_1612	0002	0.00	000.0	Primary

### Hydrographer Recommendations

RETAIN AS CHARTED

### S-57 Data

[None]

### Office Notes

Concur.

**1.3) Contact/Point - 0001/1 from f00515 / bh\_s5501\_klein5000\_sss200 / 2006-079 / 201\_1626**

**Survey Summary**

**Survey Position:** 39° 15' 27.9" N, 076° 33' 23.9" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2006-079.05:01:36 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_klein5000\_sss200 / 2006-079 / 201\_1626  
**Contact/Point:** 0001/1  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

PIER RUINS UNABLE TO SAFELY OBTAIN MULTIBEAM COVERAGE FOR LEAST DEPTH

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_klein5000_sss200/2006-079/201_1626	0001	0.00	000.0	Primary

**Hydrographer Recommendations**

RETAIN AS CHARTED

**S-57 Data**

[None]

**Office Notes**

Concur.

## 1.4) Profile/Beam - 3489/155 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 800\_2050

### Survey Summary

**Survey Position:** 39° 17' 02.0" N, 076° 36' 37.1" W  
**Least Depth:** 9.46 m (= 31.04 ft = 5.173 fm = 5 fm 1.04 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-079.20:53:42.885 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 800\_2050  
**Profile/Beam:** 3489/155  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

INSIGNIFICANT SOUNDING

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/800_2050	3489/155	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss100/2006-079/102_1454	0001	15.72	018.9	Secondary (grouped)

### Hydrographer Recommendations

#### S-57 Data

[None]

#### Office Notes

Chart current soundings.

**1.5) Profile/Beam - 221/41 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 802\_2044**

**Survey Summary**

**Survey Position:** 39° 17' 02.7" N, 076° 36' 36.7" W  
**Least Depth:** 8.52 m (= 27.96 ft = 4.660 fm = 4 fm 3.96 ft)  
**TPU (±1.96σ):** **THU (TPEh)** ±3.920 m ; **TVU (TPEv)** ±0.220 m  
**Timestamp:** 2006-079.20:44:53.191 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 802\_2044  
**Profile/Beam:** 221/41  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

pile

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/802_2044	221/41	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss200/2006-079/201_1513	0002	9.01	267.4	Secondary
f00515/bh_s5501_reson8125/2006-079/803_2100	3080/154	13.52	165.2	Secondary

**Hydrographer Recommendations**

chart pile

**Cartographically-Rounded Depth (Affected Charts):**

28ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)  
 4 ½fm (13003\_1)

**S-57 Data**

**Geo object 1:** Pile (PILPNT)  
**Attributes:** CONVIS - 2:not visual conspicuous  
 SORDAT - 20060320

## Office Notes

Concur.

## 1.6) Profile/Beam - 483/91 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 806\_2035

### Survey Summary

**Survey Position:** 39° 17' 03.5" N, 076° 36' 35.0" W  
**Least Depth:** 7.72 m (= 25.31 ft = 4.219 fm = 4 fm 1.31 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-079.20:36:04.311 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 806\_2035  
**Profile/Beam:** 483/91  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

Unidentified buoyant object near bottom. Not a DTON due to shoaler surrounding depths.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/806_2035	483/91	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss100/2006-079/101_1500	0002	3.71	271.1	Secondary
f00515/bh_s5501_klein5000_sss200/2006-079/201_1513	0001	6.17	287.0	Secondary

### Hydrographer Recommendations

#### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** VALSOU - 7.716 m  
 WATLEV - 3:always under water/submerged

### Office Notes

Insignificant

**1.7) Profile/Beam - 1548/55 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 809\_2116**

**Primary Feature for AWOIS Item #9540**

**Search Position:** 39° 17' 02.8" N, 076° 36' 30.8" W  
**Historical Depth:** 7.01 m  
**Search Radius:** 50  
**Search Technique:** MB, S2, SD  
**Technique Notes:** [None]

**History Notes:**

UNKNOWN SOURCE-- FIRST CHARTED IN 1983. LAT. 39-17-03.4 N, LONG. 76-36-30.0 W. SCALED FROM CHART 12281. (ENT 8/24/95, SJV)■ H10632/97-- OPR-E346-AHP; OBSTRUCTION LOCATED BY SIDE SCAN SONAR IN LAT. 39-17-02.789N, LONG. 76-36-30.281W (PILE). FATHOMETER LD OF 23 FEET. EVALUATOR RECOMMENDS CHARTING A 23-FOOT OBSTN AS SURVEYED AND DELETING THE TWO CHARTED SUBM. PILES. (UP 5/23/97, SJV)

**Survey Summary**

**Survey Position:** 39° 17' 02.7" N, 076° 36' 29.5" W  
**Least Depth:** 6.24 m (= 20.47 ft = 3.412 fm = 3 fm 2.47 ft)  
**TPU (±1.96σ):** THU (TPEh) ±3.920 m ; TVU (TPEv) ±0.220 m  
**Timestamp:** 2006-079.21:17:17.878 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 809\_2116  
**Profile/Beam:** 1548/55  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

unidentified debris, designated to retain shoal sounding

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/809_2116	1548/55	0.00	000.0	Primary
AWOIS_S-E906-TJ-06	AWOIS # 9540	31.12	094.6	Secondary

## Hydrographer Recommendations

chart shoalest depth

### Cartographically-Rounded Depth (Affected Charts):

20ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

3 ¼fm (13003\_1)

## S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 6.240 m

WATLEV - 3:always under water/submerged

## Office Notes

Concur with clarification. This is AWOIS 9540. Delete charted text "23 Obstn." Chart Obstn 20 ft at surveyed position and update AWOIS database at new position.

## 1.8) Profile/Beam - 322/222 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 811\_2011

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 39° 17' 05.3" N, 076° 36' 35.6" W  
**Least Depth:** 5.31 m (= 17.43 ft = 2.905 fm = 2 fm 5.43 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-079.20:11:38.787 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 811\_2011  
**Profile/Beam:** 322/222  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

SOUNDING OVER UNIDENTIFIED OBSTRUCTION

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/811_2011	322/222	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss200/2006-079/200_1529	0002	3.91	149.8	Secondary
f00515/bh_s5501_klein5000_sss200/2006-079/202_1521	0003	6.99	292.8	Secondary

#### Hydrographer Recommendations

UPDATE CHARTED DEPTH

#### Cartographically-Rounded Depth (Affected Charts):

17ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2  $\frac{3}{4}$ fm (13003\_1)

#### S-57 Data

[None]

## Office Notes

Concur. Chart has been updated. Chart 12282, 51st Ed, Feb/07, NM Feb 3/07, LNM Jan 30/07

## 1.9) Profile/Beam - 3950/231 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 39° 17' 03.9" N, 076° 36' 30.0" W  
**Least Depth:** 4.61 m (= 15.13 ft = 2.521 fm = 2 fm 3.13 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-079.20:20:54.067 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018  
**Profile/Beam:** 3950/231  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

DEPTHS AT PIER FACE SHOALER THAN NEAREST CHARTED SOUNDING; DTON SUBMITTED FOR PIER FACE

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/812_2018	3950/231	0.00	000.0	Primary

#### Hydrographer Recommendations

CHART DEPTH CURVE AT PIER FACE

#### Cartographically-Rounded Depth (Affected Charts):

15ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ½fm (13003\_1)

#### S-57 Data

[None]

## Office Notes

Do not concur. An obstruction at same location measures 14 ft least depth. Remove 15ft sounding and replace with 14ft obstn described on feature 2006-079, 812\_2018, 3939/240.

**1.10) Profile/Beam - 4818/11 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018**

**Survey Summary**

**Survey Position:** 39° 17' 04.4" N, 076° 36' 32.9" W  
**Least Depth:** 5.92 m (= 19.43 ft = 3.238 fm = 3 fm 1.43 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-079.20:21:34.785 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018  
**Profile/Beam:** 4818/11  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

possible pile remnants, appears in SSS less than one meter, designated to retain least depth

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/812_2018	4818/11	0.00	000.0	Primary

**Hydrographer Recommendations**

chart least depth

**S-57 Data**

[None]

**Office Notes**

Concur. Insignificant contact.

**1.11) Profile/Beam - 5726/231 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018**

**Survey Summary**

**Survey Position:** 39° 17' 06.0" N, 076° 36' 35.0" W  
**Least Depth:** 5.87 m (= 19.25 ft = 3.208 fm = 3 fm 1.25 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-079.20:22:13.081 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018  
**Profile/Beam:** 5726/231  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

possible debris, appears in SSS less than one meter, designated to retain least depth

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/812_2018	5726/231	0.00	000.0	Primary

**Hydrographer Recommendations**

chart least depth

**S-57 Data**

[None]

**Office Notes**

Do not concur. 19-ft item is close to 15 and 17-ft items. Insignificant height.

## 1.12) Profile/Beam - 644/206 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018

### Survey Summary

**Survey Position:** 39° 17' 00.7" N, 076° 36' 20.7" W  
**Least Depth:** 4.38 m (= 14.38 ft = 2.397 fm = 2 fm 2.38 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-079.20:18:33.725 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018  
**Profile/Beam:** 644/206  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

possible pile remnant approx 2.5 meters from pier face, less than one meter, designated to retain shoal sounding DEPTHS AT PIER FACE SHOALER THAN NEAREST CHARTED DEPTH. DTON SUBMITTED FOR PIER FACES.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/812_2018	644/206	0.00	000.0	Primary
f00515/bh_s5501_reson8125/2006-079/812_2018	646/207	0.31	180.0	Secondary (grouped)
f00515/bh_s5501_reson8125/2006-079/810_2024	4231/1	14.75	045.3	Secondary
f00515/bh_s5501_reson8125/2006-079/812_2018	901/95	14.88	106.7	Secondary (grouped)
f00515/bh_s5501_reson8125/2006-079/812_2018	917/86	15.84	106.5	Secondary (grouped)
f00515/bh_s5501_reson8125/2006-079/812_2018	878/7	15.85	086.7	Secondary (grouped)
f00515/bh_s5501_klein5000_sss100/2006-079/101_1500	0001	16.35	340.8	Secondary (grouped)
f00515/bh_s5501_reson8125/2006-079/811_2011	4674/208	17.31	349.2	Secondary (grouped)
f00515/bh_s5501_reson8125/2006-079/812_2018	954/84	17.94	109.2	Secondary (grouped)
f00515/bh_s5501_klein5000_sss200/2006-079/202_1521	0002	19.62	348.0	Secondary (grouped)
f00515/bh_s5501_reson8125/2006-079/809_2116	3209/113	35.93	061.0	Secondary (grouped)
f00515/bh_s5501_reson8125/2006-079/808_2030	795/163	44.24	056.8	Secondary (grouped)
f00515/bh_s5501_reson8125/2006-082/401_1853	646/240	44.49	142.2	Secondary (grouped)

## Hydrographer Recommendations

CHART DEPTH CONTOUR AT PIER FACE

**Cartographically-Rounded Depth (Affected Charts):**

14ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ¼fm (13003\_1)

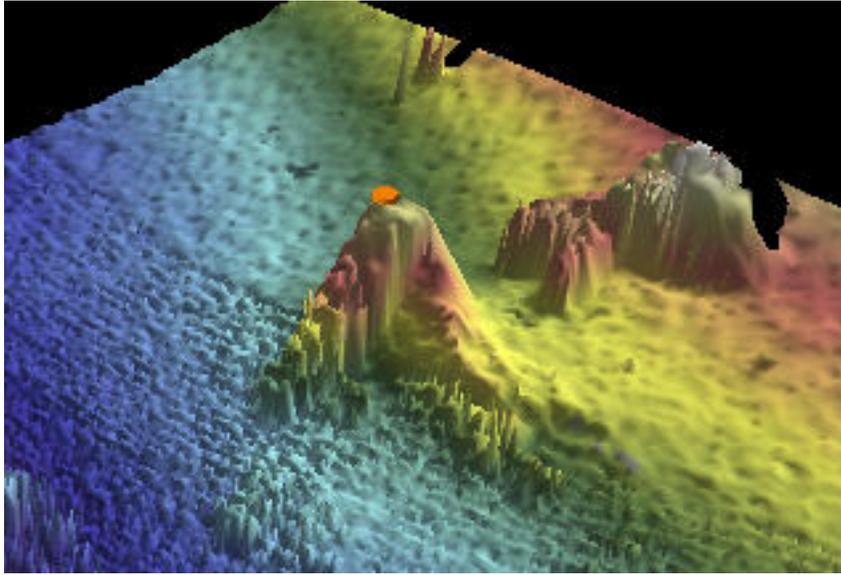
### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** QUASOU - 6:least depth known  
TECSOU - 3:found by multi-beam  
VALSOU - 4.384 m  
VERDAT - 12:Mean lower low water  
WATLEV - 3:always under water/submerged

### Office Notes

Do not concur. Object is 10 m off of pier face. Adjust obstructions danger perimeter and chart 14 ft "Obstns"

## Feature Images



*Figure 1.12.1*

**1.13) Profile/Beam - 3939/240 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018**

**Survey Summary**

**Survey Position:** 39° 17' 03.9" N, 076° 36' 30.0" W  
**Least Depth:** 4.32 m (= 14.17 ft = 2.361 fm = 2 fm 2.17 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-079.20:20:53.551 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 812\_2018  
**Profile/Beam:** 3939/240  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

[None]

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/812_2018	3939/240	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**Cartographically-Rounded Depth (Affected Charts):**

14ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ¼fm (13003\_1)

**S-57 Data**

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** QUASOU - 6:least depth known  
 TECSOU - 3:found by multi-beam  
 VALSOU - 4.318 m  
 VERDAT - 12:Mean lower low water  
 WATLEV - 3:always under water/submerged

## Office Notes

This is an obstruction approximately 12m away from the pier face. Chart 14 ft obstrn.

## 1.14) Profile/Beam - 572/169 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 39° 16' 59.2" N, 076° 36' 17.6" W  
**Least Depth:** 5.81 m (= 19.06 ft = 3.176 fm = 3 fm 1.06 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.19:03:04.831 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902  
**Profile/Beam:** 572/169  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

OBJECT DETECTED IN 100% SWMB COVERAGE AND TWO SIDE SSS PASSES. ONE DIVE INDICATED ONE UNIDENTIFIED WOODEN OBSTRUCTION. POSSIBLE RUDDER OR DREDGE GATE.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/021_1902	572/169	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss100/2006-079/100_1506	0001	7.03	114.0	Secondary (grouped)
f00515/bh_s5501_klein5000_sss200/2006-079/200_1529	0001	8.57	115.6	Secondary (grouped)

#### Hydrographer Recommendations

CHART LEAST DEPTH.

#### Cartographically-Rounded Depth (Affected Charts):

19ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

3fm (13003\_1)

#### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** INFORM - WOODEN OBJECT

QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

VALSOU - 5.808 m

WATLEV - 3:always under water/submerged

## **Office Notes**

Concur. Chart has been updated to reflect this DtoN. Chart 12281, 51st Ed, Feb/07, NM Feb 3/07, LNM Jan 30/07.

## 1.15) Profile/Beam - 1947/203 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 39° 17' 00.5" N, 076° 36' 20.2" W  
**Least Depth:** 4.71 m (= 15.47 ft = 2.578 fm = 2 fm 3.47 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.19:03:58.377 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902  
**Profile/Beam:** 1947/203  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

possible pile remnant approx 2.5 meters from pier face, less than one meter, designated to retain shoal sounding DEPTHS AT PIER FACE SHOALER THAN NEAREST CHARTED DEPTH. DTON SUBMITTED FOR PIER FACES.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/021_1902	1947/203	0.00	000.0	Primary

#### Hydrographer Recommendations

CHART DEPTH CONTOUR AT PIER FACE

#### Cartographically-Rounded Depth (Affected Charts):

15ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ½fm (13003\_1)

#### S-57 Data

[None]

## Office Notes

Do not concur. Nearby 14 ft obstruction is more of danger. See 2006-079, 812\_2018, 644/206.

## 1.16) Profile/Beam - 768/86 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902

### Survey Summary

**Survey Position:** 39° 16' 59.4" N, 076° 36' 18.2" W  
**Least Depth:** 6.26 m (= 20.53 ft = 3.422 fm = 3 fm 2.53 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.19:03:14.039 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902  
**Profile/Beam:** 768/86  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

unidentified debris, less than one meter, designated to retain least depth

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/021_1902	768/86	0.00	000.0	Primary

### Hydrographer Recommendations

chart least depth

### S-57 Data

[None]

### Office Notes

Concur. Item is insignificant.

## 1.17) Profile/Beam - 26/217 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902

### Survey Summary

**Survey Position:** 39° 16' 58.7" N, 076° 36' 16.5" W  
**Least Depth:** 6.33 m (= 20.78 ft = 3.463 fm = 3 fm 2.78 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.19:02:39.183 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 021\_1902  
**Profile/Beam:** 26/217  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

less than one meter, designated to retain shoal sounding

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/021_1902	26/217	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss100/2006-079/100_1506	0004	5.35	233.3	Secondary

### Hydrographer Recommendations

chart shoal sounding

### S-57 Data

[None]

### Office Notes

Concur. Insignificant.

**1.18) Profile/Beam - 1264/7 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 400\_1848**

**Survey Summary**

**Survey Position:** 39° 17' 01.8" N, 076° 36' 23.8" W  
**Least Depth:** 5.31 m (= 17.42 ft = 2.903 fm = 2 fm 5.42 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.18:49:27.066 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 400\_1848  
**Profile/Beam:** 1264/7  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

probable pile, approx 10 meters from pier face; very slight in SSS, but very near nadir

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/400_1848	1264/7	0.00	000.0	Primary

**Hydrographer Recommendations**

chart least depth, or chart depth contour at pier face

**S-57 Data**

[None]

**Office Notes**

Item is insignificant.

**1.19) Profile/Beam - 1575/217 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 400\_1848**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 39° 17' 02.2" N, 076° 36' 24.4" W  
**Least Depth:** 4.37 m (= 14.34 ft = 2.390 fm = 2 fm 2.34 ft)  
**TPU (±1.96σ):** **THU (TPEh)** ±3.920 m ; **TVU (TPEv)** ±0.220 m  
**Timestamp:** 2006-082.18:49:41.656 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 400\_1848  
**Profile/Beam:** 1575/217  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

DEPTHS AT PIER FACE SHOALER THAN NEAREST CHARTED SOUNDING

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/400_1848	1575/217	0.00	000.0	Primary
f00515/bh_s5501_reson8125/2006-079/812_2018	2129/210	0.47	080.0	Secondary

**Hydrographer Recommendations**

CHART DEPTH CURVE AT PIER FACE

**Cartographically-Rounded Depth (Affected Charts):**

14ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)  
 2 ¼fm (13003\_1)

**S-57 Data**

[None]

## Office Notes

Do not concur. Item appears to be a ruined piling and should be charted as an obstruction. Chart 14 ft obstrn. The chart was updated reflecting this item as a shoal and submitted as a DtoN and is present on Chart 12281, 51st Ed, Feb/07.

**1.20) Profile/Beam - 2986/223 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 810\_2024**

**DANGER TO NAVIGATION**

**Primary Feature for AWOIS Item #9539**

**Search Position:** 39° 17' 02.0" N, 076° 36' 27.0" W  
**Historical Depth:** [None]  
**Search Radius:** 0  
**Search Technique:** SD, S4, MB  
**Technique Notes:** Complete coverage within survey limits is adequate for disproval

**History Notes:**

UNKNOWN SOURCE-- FIRST CHARTED IN 1976. LAT. 39-17-02.0N, LONG. 76-36-27.0W. SCALED FROM CHART 12281). (ENT 8/24/95, SJV)■ H10632/95-- OPR-E346-AHP; EVALUATOR CONSIDERS ITEM NOT DISPROVED. RETAIN AS CHARTED. (UP 5/23/97, SJV)

**Survey Summary**

**Survey Position:** 39° 17' 01.9" N, 076° 36' 27.1" W  
**Least Depth:** 7.86 m (= 25.79 ft = 4.298 fm = 4 fm 1.79 ft)  
**TPU (±1.96σ):** THU (TPEh) ±3.920 m ; TVU (TPEv) ±0.220 m  
**Timestamp:** 2006-079.20:26:48.418 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 810\_2024  
**Profile/Beam:** 2986/223  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

REQUEST FOR CHARTED FEATURE REMOVAL.

REMOVE CHARTED (12281) SUMB PILE. DISPROVED WITH 200% SIDESCAN AND 100% MULTIBEAM. COVERAGE AREA 72 x 400 METERS.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/810_2024	2986/223	0.00	000.0	Primary
AWOIS_S-E906-TJ-06	AWOIS # 9539	4.72	225.4	Secondary

## Hydrographer Recommendations

REMOVE CHARTED (12281) SUMB PILE.

### Cartographically-Rounded Depth (Affected Charts):

26ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

4 ¼fm (13003\_1)

## S-57 Data

[None]

## Office Notes

Concur with clarification. Item was submitted as an anti-dton and is no longer on chart 12281. AWOIS 9539 disproved. No further charting action necessary.

## 1.21) Profile/Beam - 1566/147 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 402\_1711

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 39° 17' 06.6" N, 076° 36' 36.2" W  
**Least Depth:** 4.72 m (= 15.50 ft = 2.583 fm = 2 fm 3.50 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.17:12:35.873 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 402\_1711  
**Profile/Beam:** 1566/147  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

SHOAL SOUNDING

100% SWMB COVERAGE. APPEARS IN TWO SSS RECORDS.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/402_1711	1566/147	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss200/2006-079/202_1521	0004	9.35	275.5	Secondary (grouped)
f00515/bh_s5501_klein5000_sss200/2006-079/203_1537	0001	9.44	091.0	Secondary (grouped)

#### Hydrographer Recommendations

CHART SHOAL SOUNDING

#### Cartographically-Rounded Depth (Affected Charts):

15ft (12281\_1, 12278\_1, 12273\_1, 12280\_1)

2 ½fm (13003\_1)

#### S-57 Data

[None]

## Office Notes

Concur. Item is presently charted on 12281 as an obstruction. Retain as charted.

**1.22) Profile/Beam - 655/9 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 801\_2056**

**Survey Summary**

**Survey Position:** 39° 17' 01.4" N, 076° 36' 33.2" W  
**Least Depth:** 9.04 m (= 29.66 ft = 4.943 fm = 4 fm 5.66 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.221$  m  
**Timestamp:** 2006-079.20:56:42.601 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 801\_2056  
**Profile/Beam:** 655/9  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

possible pile remnant, appears in SSS, less than one meter, designated to retain shoal depth

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/801_2056	655/9	0.00	000.0	Primary

**Hydrographer Recommendations**

chart shoal sounding

**S-57 Data**

[None]

**Office Notes**

Insignificant contact.

**1.23) Profile/Beam - 2314/41 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 801\_2056**

**Survey Summary**

**Survey Position:** 39° 16' 57.9" N, 076° 36' 23.0" W  
**Least Depth:** 7.74 m (= 25.40 ft = 4.233 fm = 4 fm 1.40 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-079.20:58:23.877 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 801\_2056  
**Profile/Beam:** 2314/41  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

possible pile remnant, in SSS, less than one meter, designated to retain shoal sounding

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/801_2056	2314/41	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

[None]

**Office Notes**

Insignificant contact.

## 1.24) Profile/Beam - 3070/1 from f00515 / bh\_s5501\_reson8125 / 2006-079 / 808\_2030

### Survey Summary

**Survey Position:** 39° 17' 02.8" N, 076° 36' 32.0" W  
**Least Depth:** 7.17 m (= 23.53 ft = 3.921 fm = 3 fm 5.53 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.221$  m  
**Timestamp:** 2006-079.20:32:36.635 (03/20/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-079 / 808\_2030  
**Profile/Beam:** 3070/1  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

unidentified debris, less than one meter, appears in sss, designated to retain shoal sounding

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-079/808_2030	3070/1	0.00	000.0	Primary

### Hydrographer Recommendations

retain obstn and charted shoal sounding

### S-57 Data

[None]

### Office Notes

Do not concur. Insignificant contact. Chart soundings.

**1.25) Profile/Beam - 2503/22 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 401\_1853**

**Survey Summary**

**Survey Position:** 39° 17' 02.6" N, 076° 36' 23.0" W  
**Least Depth:** 6.25 m (= 20.51 ft = 3.418 fm = 3 fm 2.51 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.18:55:08.761 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 401\_1853  
**Profile/Beam:** 2503/22  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

unidentified debris, designated to retain shoal sounding

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/401_1853	2503/22	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss100/2006-079/100_1506	0002	12.15	032.2	Secondary (grouped)

**Hydrographer Recommendations**

chart shoal sounding

**S-57 Data**

[None]

**Office Notes**

Do not concur. Least depth of 20 ft already shown on chart to the north. Nearby 14 and 17 also warns the mariner. Insignificant.

**1.26) Profile/Beam - 1141/16 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 401\_1853**

**Survey Summary**

**Survey Position:** 39° 17' 02.6" N, 076° 36' 22.4" W  
**Least Depth:** 5.91 m (= 19.38 ft = 3.230 fm = 3 fm 1.38 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.18:54:04.873 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 401\_1853  
**Profile/Beam:** 1141/16  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

unidentified debris, less than one meter, designated to retain least depth

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/401_1853	1141/16	0.00	000.0	Primary

**Hydrographer Recommendations**

chart shoal sounding

**S-57 Data**

[None]

**Office Notes**

Concur. Insignificant item.

**1.27) Profile/Beam - 317/189 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 411\_1723**

**Survey Summary**

**Survey Position:** 39° 17' 01.4" N, 076° 36' 37.4" W  
**Least Depth:** 9.36 m (= 30.71 ft = 5.119 fm = 5 fm 0.71 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.17:23:51.165 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 411\_1723  
**Profile/Beam:** 317/189  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

probable pier remnant, less than one meter, designated to retain shoal sounding

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/411_1723	317/189	0.00	000.0	Primary

**Hydrographer Recommendations**

chart shoal sounding

**S-57 Data**

[None]

**Office Notes**

Concur. Insignificant feature.

## 1.28) Profile/Beam - 751/144 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 414\_1710

### Survey Summary

**Survey Position:** 39° 17' 05.4" N, 076° 36' 33.0" W  
**Least Depth:** 6.28 m (= 20.61 ft = 3.434 fm = 3 fm 2.61 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.17:10:58.144 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 414\_1710  
**Profile/Beam:** 751/144  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

#### Remarks:

probable piling remnant, less than one meter, designated to retain shoal sounding

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/414_1710	751/144	0.00	000.0	Primary
f00515/bh_s5501_klein5000_sss100/2006-079/100_1506	0003	5.43	347.6	Secondary
f00515/bh_s5501_klein5000_sss200/2006-079/202_1521	0001	15.74	309.8	Secondary (grouped)

### Hydrographer Recommendations

chart shoal sounding

### S-57 Data

[None]

### Office Notes

Insignificant item.

**1.29) Profile/Beam - 1012/218 from f00515 / bh\_s5501\_reson8125 / 2006-082 / 414\_1710**

**Survey Summary**

**Survey Position:** 39° 17' 05.8" N, 076° 36' 33.3" W  
**Least Depth:** 5.92 m (= 19.42 ft = 3.237 fm = 3 fm 1.42 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 3.920$  m ; **TVU (TPEv)**  $\pm 0.220$  m  
**Timestamp:** 2006-082.17:11:10.406 (03/23/2006)  
**Survey Line:** f00515 / bh\_s5501\_reson8125 / 2006-082 / 414\_1710  
**Profile/Beam:** 1012/218  
**Charts Affected:** 12281\_1, 12278\_1, 12273\_1, 12280\_1, 13003\_1

**Remarks:**

[None]

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00515/bh_s5501_reson8125/2006-082/414_1710	1012/218	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

[None]

**Office Notes**

Insignificant.

## APPENDIX III

### Progress Sketch and Survey Outline

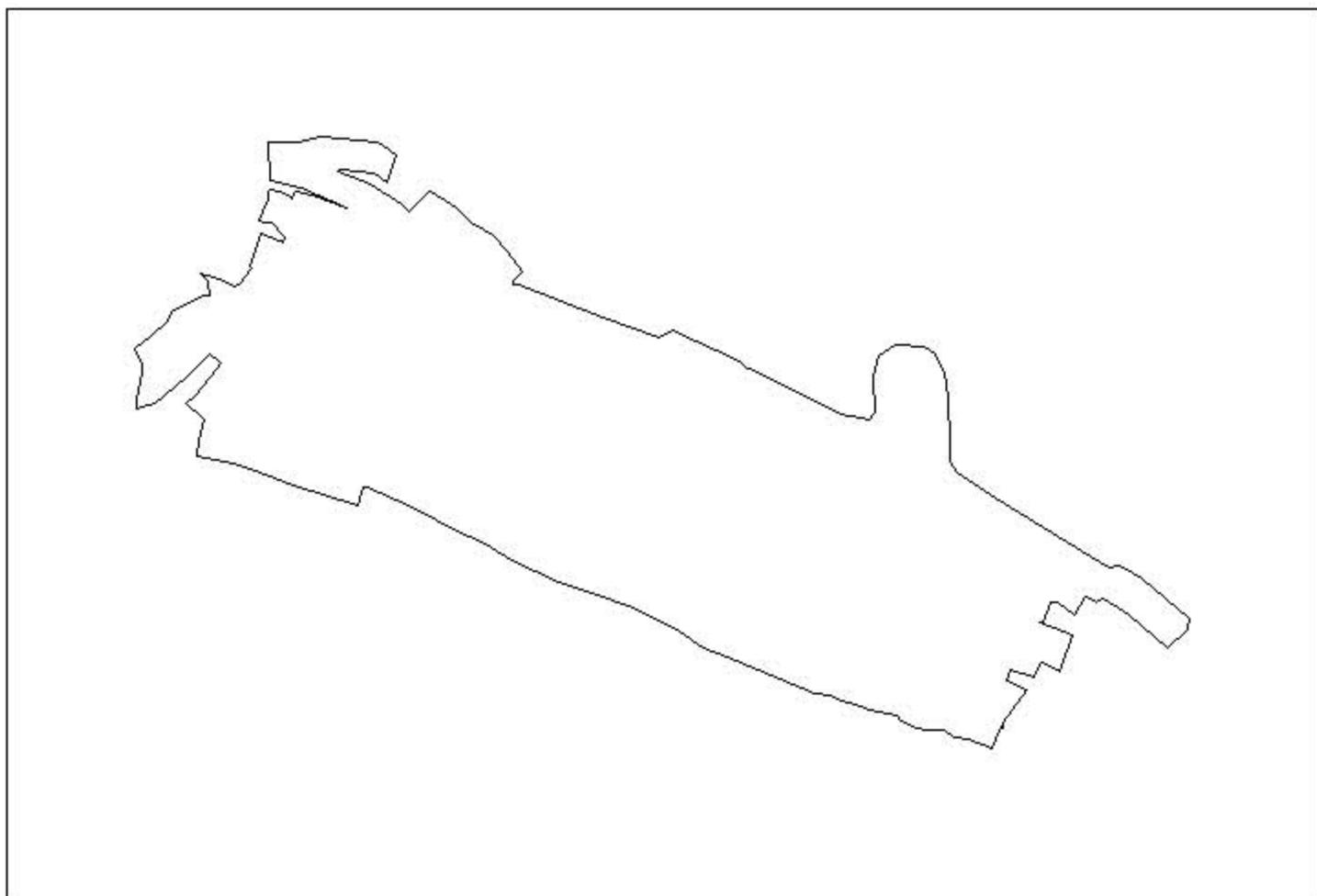
100%



Project	Sheet_Letter	H_num	HQ_Est_SNM	Cuml PercCompPrev	Cuml PercCompCu	SNM_CompCurt
S-E906-BH		F00515	0	100	100	0

Project	Month	LNM_VBI	LNM_MB	LNM_SSE	SV_Casts	Bottom_Sam	AWOIS_Item	Tide_Guage_Inst	DAS	DTime equip_H	DTime_Weather_	D_Time_other_t
E906	March	0.00	3.89	2.67	1.00	0.00	2.00	0.00	4.00	4.00	0.00	0.00

**Progress Sketch S-E906-BH-06**  
**March, 2006**



## APPENDIX III

### Tides and Water Levels

March 31, 2006

MEMORANDUM FOR: Chief, Requirements and Development Division, N/OPS1

FROM: LTJG BRIANA WELTON, NOAA S/V BAY HYDROGRAPHER

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final zoning in MapInfo and .MIX format
3. Six Minute Water Level data (Co-ops web site)

Transmit data to:

NOAA/NOS/Atlantic Hydrographic Branch  
N/CS33, Building #2  
439 West York Street  
Norfolk, VA 23510  
ATTN: Chief AHB

These data are required for the processing of the following hydrographic survey:

Project No.: S-E906-BH-06  
Registry No.: F00515  
State: MD  
Locality: BALTIMORE HARBOR  
Sublocality: PATAPSCO RIVER PIER RUINS AND INNER HARBOR, PIERS 3 AND 4

Attachments containing:

- 1) an Abstract of Times of Hydrography,
- 2) digital MID MIF files of the track lines from pydro on CD/diskette

cc: N/CS33

---

Year_DOY	Min Time	Max Time
2006_079	20:11:24	21:19:11
2006_081	15:53:59	15:54:45
2006_082	16:47:06	19:04:17



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
National Ocean Service  
Silver Spring, Maryland 20910



## APPENDIX V

### Supplemental Correspondence

From	<a href="mailto:Briana.Welton@noaa.gov">&lt;Briana.Welton@noaa.gov&gt;</a>
Sent	Thursday, April 20, 2006 9:02 am
To	<a href="mailto:president@marylandpilots.com">president@marylandpilots.com</a>
Cc	<a href="mailto:Tod.Schattgen@noaa.gov">Tod Schattgen &lt;Tod.Schattgen@noaa.gov&gt;</a> <a href="mailto:jake.yoos@noaa.gov">jake.yoos@noaa.gov</a> <a href="mailto:eric.m.moore@noaa.gov">eric.m.moore@noaa.gov</a>
Bcc	
Subject	Patapsco River Pier Ruins in Baltimore Harbor

Sir,

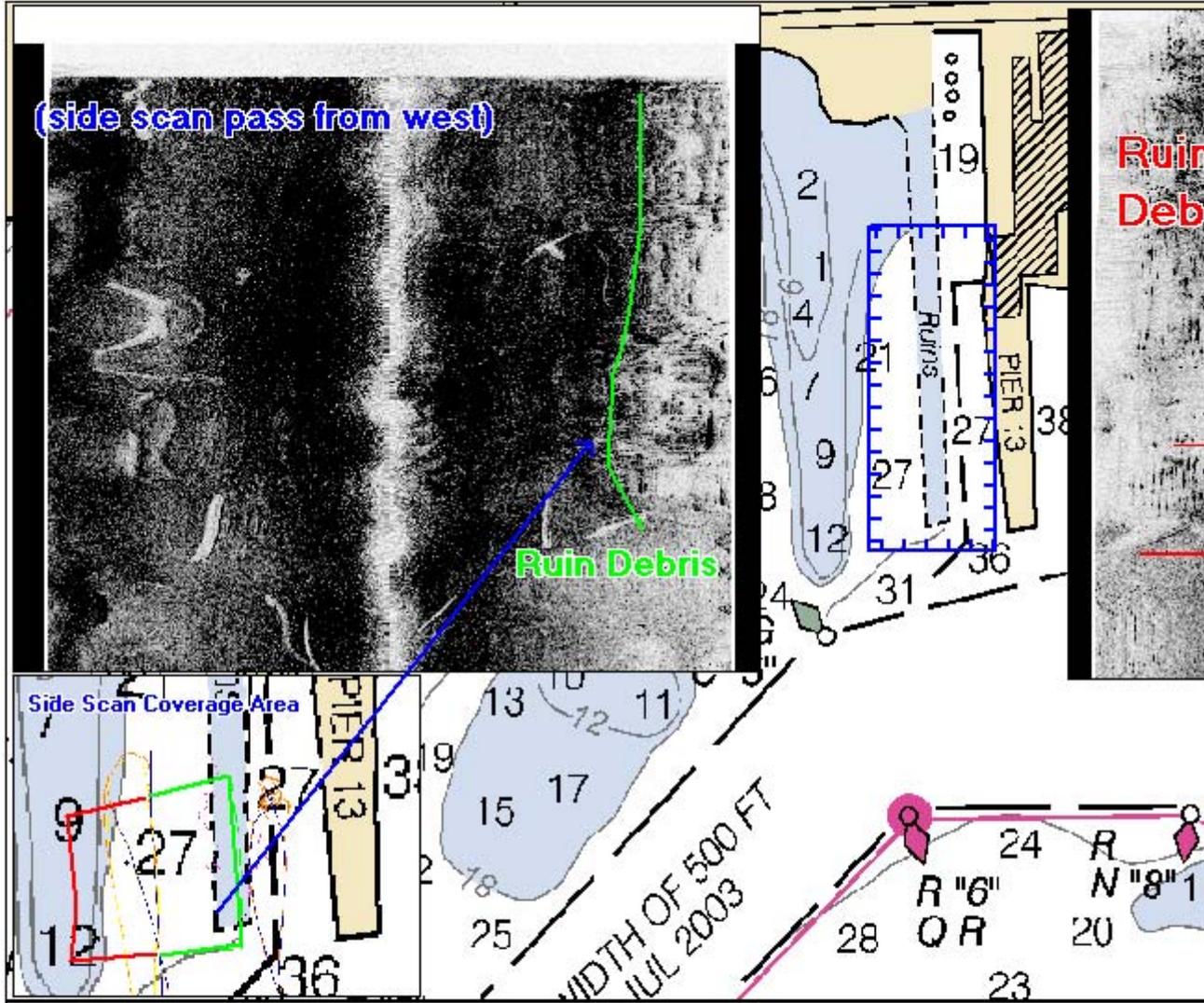
Attached is a chartlet of the Patapsco River Pier Ruins the Bay Hydrographer investigated in Baltimore Harbor last month. Since we were only able to acquire side scan from either side of the debris, we don't have an exact position or least depth. However, from the shadow length, we know the debris stands at least 12 feet off the bottom and is probably near the surface. The area is accurately charted. Please let me know if you have any questions.

Best Regards,

Bri

LTJG Briana Welton, NOAA  
NOAA S/V Bay Hydrographer  
410-916-3831

---



(side scan pass from west)

Ruin Debris

Ruin  
Deb

Side Scan Coverage Area

Chartlet 1 of 1    CREATED FOR BALTIMORE PILOTS



NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SERVICE

Project: S-E906-BH-06  
 Survey: F00515  
 State: Maryland  
 Locality: Baltimore Harbor  
 Sub-locality: Patapsco River Pier Runins  
 Survey Scale: 1:5,000



From	<a href="mailto:&lt;Briana.Welton@noaa.gov&gt;">&lt;Briana.Welton@noaa.gov&gt;</a>
Sent	Friday, March 31, 2006 9:12 am
To	<a href="mailto:mcd.dton@noaa.gov">mcd.dton@noaa.gov</a>
Cc	<a href="mailto:jake.yoos@noaa.gov">jake.yoos@noaa.gov</a> <a href="mailto: Tod.Schattgen@noaa.gov">Tod Schattgen &lt;Tod.Schattgen@noaa.gov&gt;</a> <a href="mailto:doug.baird@noaa.gov">doug.baird@noaa.gov</a> <a href="mailto:eric.m.moore@noaa.gov">eric.m.moore@noaa.gov</a> <a href="mailto:paul.turner@noaa.gov">paul.turner@noaa.gov</a> <a href="mailto:jeremy.mchugh@noaa.gov">jeremy.mchugh@noaa.gov</a>
Bcc	
Subject	F00515 Baltimore Inner Harbor Anti-DTON Report
Attachments	<a href="#">F00515_ANTI_DTON_REPORT_1.pdf</a> 7K <a href="#">F00515_ANTI_DTON_REPORT_1.xml</a> 2K

Attached is the Pydro Anti-Dton Report for the charted (12281) submerged pile near the faces of Piers 3 and 4 in Baltimore Inner Harbor.

LT(jg) Briana Welton, NOAA  
NOAA S/V Bay Hydrographer  
410-916-3831

From	<a href="mailto:&lt;Briana.Welton@noaa.gov&gt;">&lt;Briana.Welton@noaa.gov&gt;</a>
Sent	Tuesday, April 11, 2006 12:49 pm
To	<a href="mailto:mcd.dton@noaa.gov">mcd.dton@noaa.gov</a>
Cc	<a href="mailto:jake.yoos@noaa.gov">jake.yoos@noaa.gov</a> <a href="mailto:doug.baird@noaa.gov">doug.baird@noaa.gov</a> <a href="mailto: Tod.Schattgen@noaa.gov">Tod Schattgen &lt;Tod.Schattgen@noaa.gov&gt;</a>
Bcc	
Subject	E309-BH-06, F00515 DTON REPORT 1
Attachments	<a href="#">F00515_DTON_REPORT_1.pdf</a> 7K <a href="#">F00515_DTON_REPORT_1.xml</a> 3K

Attached is a DTON report for a shoal sounding in Baltimore Inner Harbor.

LT(jg) Briana Welton, NOAA  
NOAA S/V Bay Hydrographer

	<a href="mailto:&lt;Briana.Welton@noaa.gov&gt;">&lt;Briana.Welton@noaa.gov&gt;</a>
Sent	Wednesday, June 14, 2006 5:14 pm
To	<a href="mailto:mcd.dton@noaa.gov">mcd.dton@noaa.gov</a>
Cc	<a href="mailto:jake.yoos@noaa.gov">jake.yoos@noaa.gov</a> <a href="mailto:doug.baird@noaa.gov">doug.baird@noaa.gov</a> <a href="mailto: Tod.Schattgen@noaa.gov">Tod Schattgen</a>

	<a href="mailto: Tod.Schattgen@noaa.gov"> &lt;Tod.Schattgen@noaa.gov&gt;</a> <a href="mailto: eric.m.moore@noaa.gov"> eric.m.moore@noaa.gov</a> <a href="mailto: laurie.brennan@noaa.gov"> laurie.brennan@noaa.gov</a>
Bcc	
Subject	E309-BH-06, F00515 DTON REPORT 2
Attachments	<a href="#"> F00515 DTON REPORT 2.pdf</a> 11K <a href="#"> F00515 DTON REPORT 2.xml</a> 6K

Attached is a DTON report for two additional shoal soundings in Baltimore Inner Harbor.

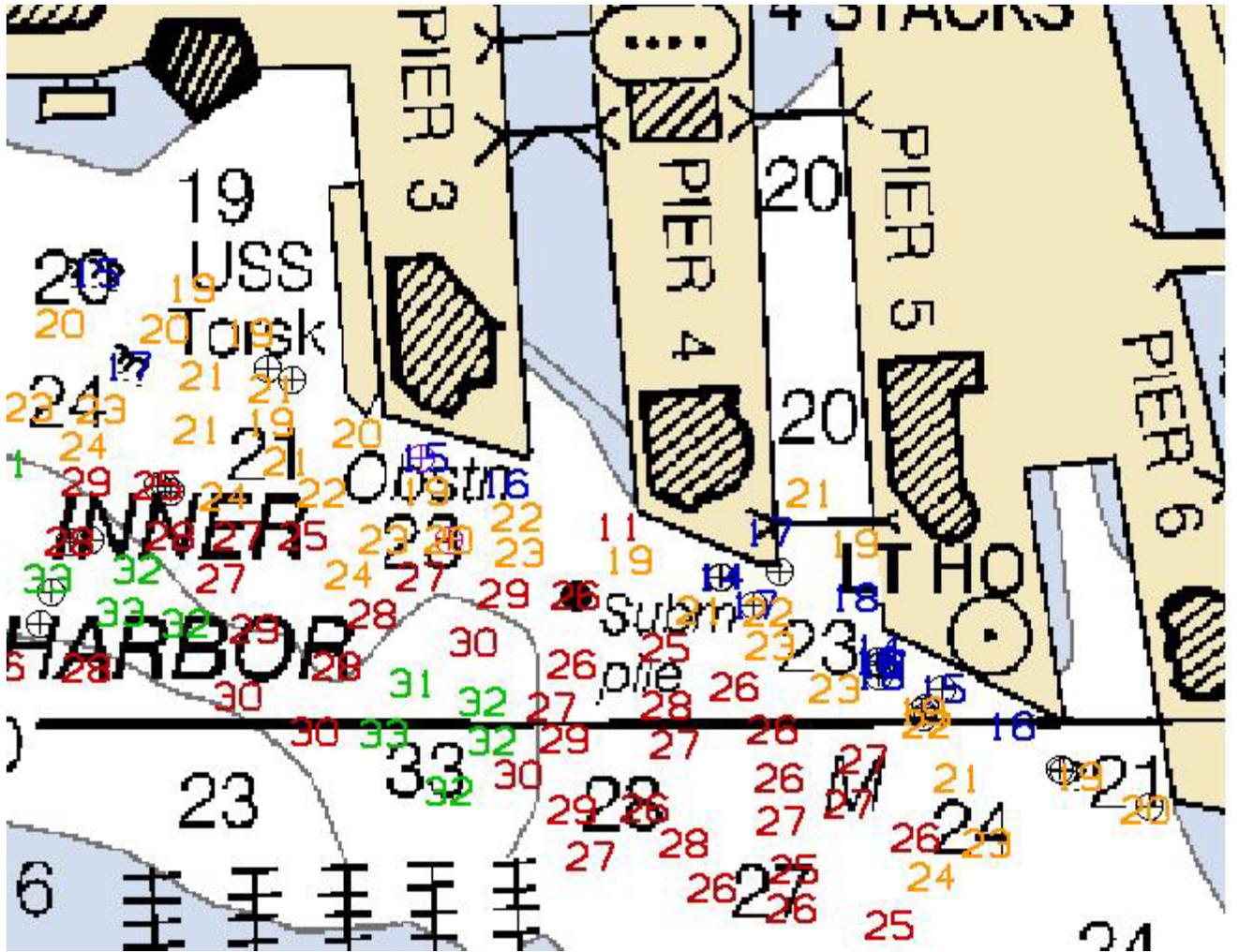
LT(jg) Briana Welton, NOAA  
NOAA S/V Bay Hydrographer  
410-916-3831

From	<a href="mailto: Briana.Welton@noaa.gov"> &lt;Briana.Welton@noaa.gov&gt;</a>
Sent	Friday, June 16, 2006 9:22 am
To	<a href="mailto: mcd.dton@noaa.gov"> mcd.dton@noaa.gov</a>
Cc	<a href="mailto: jake.yoos@noaa.gov"> jake.yoos@noaa.gov</a> <a href="mailto: doug.baird@noaa.gov"> doug.baird@noaa.gov</a> <a href="mailto: Tod.Schattgen@noaa.gov"> Tod Schattgen &lt;Tod.Schattgen@noaa.gov&gt;</a> <a href="mailto: eric.m.moore@noaa.gov"> eric.m.moore@noaa.gov</a> <a href="mailto: laurie.brennan@noaa.gov"> laurie.brennan@noaa.gov</a>
Bcc	
Subject	E309-BH-06, F00515 DTON REPORT 3
Attachments	<a href="#"> F00515 PierFaceShoaling1.jpg</a> 1.6MB <a href="#"> F00515 DTON REPORT 3.pdf</a> 12K <a href="#"> F00515 D</a>

Attached is a DTON report for the faces of piers 3, 4, and 5 in Baltimore Inner Harbor. We have selected the shoalest depth at the face of each pier and created a DTON report for each. However, since there is shoaling along the entire face of each pier that extends 5-10 meters seaward of each pier, we suggest charting a depth contour at the face of each. I have also attached two graphics that will hopefully illustrate what I am describing. Please contact us with any questions.

LT(jg) Briana Welton, NOAA  
NOAA S/V Bay Hydrographer  
410-916-3831

---



File: F00515\_PierFaceShoaling2.bmp

From	<a href="mailto:Norris.A.Wike@noaa.gov">Norris Wike &lt;Norris.A.Wike@noaa.gov&gt;</a>
Sent	Thursday, April 13, 2006 9:18 am
To	<a href="mailto:Briana.Welton@noaa.gov">Briana.Welton@noaa.gov</a>
Cc	<a href="mailto:Tod.Schattgen@noaa.gov">Tod.Schattgen@noaa.gov</a>
Bcc	
Subject	Re: more dton questions

Good morning Briana,

There are no guidelines that I know of about depths near pier faces. What you want to look at is what are the drafts of the vessels entering the area. The best way to report this DTON is send a chartlet of the area with a limit line draw for the area that is shoaling. What I mean is, it appears to me that the 18 foot curve has migrated to the south. Draw a new 18 foot depth curve and submit this as a danger.

As this statement to your write up of the DTON. The following chartlet shows an area which has shoaling that ranges from 11 to 18 feet. That way you want have to pick each sounding and discuss.

My biggest concern is the 15 and 17 ft soundings to the northwest of the data that are plotting over a charted 20 ft and 24 ft depths. Are these items (obstructions)? If they are only depths you may want to run some additional lines here to show the shoaling in this area also.

If you have any additional questions feel free to e-mail or call me at 757-441-6862 or 757-441-6319. Have a good day.

Norris

Briana.Welton@noaa.gov wrote:

>  
> Hello Again,  
>  
> Along these same lines, what is the guidance on depths at pier faces?  
> How are charting decisions made in those areas? See the attached jpeg  
> to see what I'm talking about. I've circled the shoaler depths in  
> red.

>  
> Again, thanks for the help.

>  
> Bri

>  
> -----  
> Name: Baltimore Inner Harbor.JPG  
> Baltimore Inner Harbor.JPG Type: JPEG Image (image/jpeg)  
> Encoding: base64

From	<a href="mailto:Briana.Welton@noaa.gov">&lt;Briana.Welton@noaa.gov&gt;</a>
Sent	Tuesday, March 28, 2006 2:43 pm
To	<a href="mailto:emily.b.christman@noaa.gov">")"&gt;"emily.b.christman"</a> <Emily.B.Christman@noaa.gov>
Cc	<a href="mailto:jake.yoos@noaa.gov">jake.yoos@noaa.gov</a>
Bcc	
Subject	Re: Baltimore?

Captain Christman,

We sent a DVD of the preliminary data (raw, hdcs, hvf, & svp) via FedEx to you this morning. The data does not have final approved water levels or updated patch test values applied to it. The water levels will probably not change. The patch test values should not alter the data on an order greater than centimeters, but will help align the data. We will patch test this afternoon and send the data package LT Yoos promised by Friday.

In general the area we surveyed in the harbor is clear, though we did see a few shoaler-than-charted (12281) depths. Four items of note:

1. The shoalest depth at the very edge of the pier 3 face is 4.572 meters (15.6 feet).
2. The least depth over the charted obstruction near the 23-foot sounding in front of pier 3 is 6.521 meters (20.5 feet).
3. There is a wooden object that we dove on near the southeast corner of pier 4 with a least depth of 5.325 meters (17.47 feet).
4. There is some shoaling at the face of pier 4 that is shoaler than 15 feet.

I hope this will hold you over until the end of the week.

V/r,

Bri

LTJG Briana Welton, NOAA  
S/V Bay Hydrographer  
410-916-3831

----- Original Message -----

From: "Jake.Yoos" <Jake.Yoos@noaa.gov>  
Date: Monday, March 27, 2006 4:23 pm  
Subject: Re: Baltimore?

> Ma'am,

>

> Sorry about the delay - we did complete the survey and applied  
> preliminary tides (which shouldn't change). The area is clear.

> The charted submerged

> piling does not exist and we will submit an anti-dton to remove it  
> from the  
> chart. We found a wooden piece of debris that has a least depth  
> of 17 ft  
> in front of one of the piers, but I believe it is not in front of  
> the pier  
> to which TJ is bound.  
>  
> We will burn the data to a DVD this week (a sounding plot, a dtm  
> image, as  
> well as the caris hips/sips data) and forward it to you. We  
> discovered during a survey last summer that the Baltimore shoreline  
> is off by anywhere  
> from 5 to 10 meters. If you view the dtm's with a chart backdrop,  
> it will  
> look like we did not survey up to the pier face, however, if you  
> look in  
> the hips data, you will see the pier face in the multibeam data.  
>  
> I have officially rotated up to Silver Spring this week (the view is  
> substantially better on the boat) and Briana Welton has relieved  
> me on Bay  
> Hydrographer. Since she has the data on the boat, she will be a  
> better contact for any further questions you have regarding the data.  
>  
> I will probably be lending a hand with the NOS folks in baltimore,  
> so I'll  
> see you there.  
>  
> Respectfully,  
> Jake  
>  
>  
>  
> "emily.b.christman" wrote:  
>  
> > Hi Jake, I haven't heard from HSD or NSD the results of your  
> efforts in  
> > Baltimore, other than a rumor that it might be OK - do you have  
> decent tides yet and/or info to pass on?  
> > thanks!  
>  
>

----- Original Message -----

From: "Jake.Yoos" <Jake.Yoos@noaa.gov>

Date: Monday, March 27, 2006 4:23 pm

Subject: Re: Baltimore?

> Ma'am,  
>

> Sorry about the delay - we did complete the survey and applied  
> preliminary tides (which shouldn't change). The area is clear.  
> The charted submerged  
> piling does not exist and we will submit an anti-dton to remove it  
> from the  
> chart. We found a wooden piece of debris that has a least depth  
> of 17 ft  
> in front of one of the piers, but I believe it is not in front of  
> the pier  
> to which TJ is bound.  
>  
> We will burn the data to a DVD this week (a sounding plot, a dtm  
> image, as  
> well as the caris hips/sips data) and forward it to you. We  
> discovered during a survey last summer that the Baltimore shoreline  
> is off by anywhere  
> from 5 to 10 meters. If you view the dtm's with a chart backdrop,  
> it will  
> look like we did not survey up to the pier face, however, if you  
> look in  
> the hips data, you will see the pier face in the multibeam data.  
>  
> I have officially rotated up to Silver Spring this week (the view is  
> substantially better on the boat) and Briana Welton has relieved  
> me on Bay  
> Hydrographer. Since she has the data on the boat, she will be a  
> better contact for any further questions you have regarding the data.  
>  
> I will probably be lending a hand with the NOS folks in Baltimore,  
> so I'll  
> see you there.  
>  
> Respectfully,  
> Jake  
>  
>  
>  
> "emily.b.christman" wrote:  
>  
> > Hi Jake, I haven't heard from HSD or NSD the results of your  
> efforts in  
> > Baltimore, other than a rumor that it might be OK - do you have  
> decent tides yet and/or info to pass on?  
> > thanks!  
>  
>

**ATLANTIC HYDROGRAPHIC BRANCH  
EVALUATION REPORT to Accompany  
Survey F00515 (2006)**

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.

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

CARIS HIPS/SIPS version 6.1 SP2 HF 1  
CARIS Bathy Manager version 2.1 SP1 HF 9  
CARIS HOM version 3.3 SP3 HF8  
CARIS S57 Composer version 1.0 HF1

**B.2. QUALITY CONTROL**

**B.2.1. H-Cell**

The AHB source depth grid for the survey's nautical chart update product entailed the sole finalized 1m grid. The survey scale selected soundings were extracted from this 1m surface. The selected sounding set is approximately 10 to 20 times the number of charted depths. Only one chart scale sounding was collected and is a subset of the survey scale selected soundings. The surface model was referenced when selecting the chart scale sounding, to ensure that the selected sounding portrayed the bathymetry within the common area.

The SAHOB files included sounding selections (SOUNDG), features (SBDARE), Meta objects (M\_COVR, M\_QUAL, DEPARE), and cartographic Blue Notes. The limited and sparcity of soundings precluded the use of META layers. The individual SAHOB files were inserted into one BASE Manager feature layer and exported to S57 format in order to create the H-Cell deliverable.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (ENC\_CU.000) with all values measured in feet following NOAA sounding rounding rules.

Chart compilation was performed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

The F00512 CARIS H-Cell final deliverables include the following products:

US500515_CU.000	1:15,000 Scale	F00515 H-Cell with Chart Scale Selected Soundings
US500515_SS.000	1:5,000 Scale	F00515 Selected Soundings

### **B.2.3. BASE Surfaces**

The following Fieldsheet was generated for this H-Cell:

<b><u>Fieldsheet</u></b>	<b><u># BASE Surfaces</u></b>	<b><u>Resolution</u></b>
F00515_AHB_1m	1	1m Shallow

## **C. VERTICAL AND HORIZONTAL CONTROL**

Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW). See Descriptive Report Section C for discussion of Tide Zoning.

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 18.

## **D. RESULTS AND RECOMMENDATIONS**

**D.1 CHART COMPARISON**    12281 (51st Edition, Feb./07)  
 Corrected through NM 02/03/07  
 Corrected through LNM 01/30/07  
 Scale 1:15,000

12278 (76<sup>th</sup> Edition, Dec./07)  
 Corrected through NM 12/15/07  
 Corrected through LNM 12/11/07  
 Scale 1:40,000

### **ENC Comparison**

US5MD11M  
 Baltimore Harbor  
 Edition 19  
 Update Application Date 2008-10-03  
 Issue Date 2008-10-03  
 References: Chart 12281

### **D.1.b. Dangers to Navigation**

The following Dangers to Navigation were submitted by the field and updated on the current 12281 chart edition. Modifications are recommended by AHB (in red) as follows:

Item	Position	Modify?
17 ft Obstn	39/17/05.265 N, 076/36/35.602 W	No change
15 ft Sounding	39/17/03.922 N, 076/36/30.042 W	<b>Change to</b>
<b>14 ft Obstn</b>	<b>39/17/03.922 N, 076/36/30.004 W</b>	
19 ft Obstn	39/16/59.231 N, 076/36/17.648 W	No change
15 ft Obstn	39/17/00.514 N, 076/36/20.223 W	<b>This item falls</b>
<b>within currently charted 17 ft “Obstns” danger area. Twelve meters to the west of this object is a 14 ft obstruction and is included in the H-Cell deliverable.</b>		
14 ft Sounding	39/17/02.165 N, 076/36/24.386 W	<b>Change to 14 ft</b>
<b>Obstn.</b>		
15 ft Obstn	39/17/06.628 N, 076/36/36.204 W	No change

### **D.1.c. Other Features - AWOIS**

Two AWOIS items were addressed with the following outcomes and needing update on raster/ENC and database:

AWOIS #	Outcome	Position Update	Description
9540	Found	39/17/02.708 N, 076/36/29.518 W	20 ft Obstn
9539	Disproved	Remove from ENC US5MD11M	Sent in as anti-DtoN

### **D.2.h. 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. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey.

### **D.3. ADEQUACY OF SURVEY**

The present survey is adequate to supersede charted features within the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

**APPROVAL SHEET**  
**F00515**

**Initial Approvals:**

The completed survey has been inspected with regard to survey coverage, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone comprehensive reviews per the Hydrographic Surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

---

**Wesley G Kitt**  
Physical Scientist  
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: \_\_\_\_\_  
**Shepard Smith**  
Commander, NOAA  
Chief, Atlantic Hydrographic Branch