

F00670

NOAA Form 76-35A

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Survey

DESCRIPTIVE REPORT

Type of Survey: Investigation

Registry Number: F00670

LOCALITY

State: Maryland

General Locality: Severn River

Sub-locality: Severn River

2016

CHIEF OF PARTY
LTJG Sarah L. Chappel, NOAA

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

F00670

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: **Maryland**

General Locality: **Severn River**

Sub-Locality: **Severn River**

Scale: **1: 5,000**

Dates of Survey: **12/08/2016**

Instructions Dated: **10/26/2016**

Project Number: **S-E932-BH2-16**

Field Unit: **R/V Bay Hydro II**

Chief of Party: **LCJG Sarah L. Chappel**

Soundings by: **Multibeam Echo Sounder**

Imagery by:

Verification by: **Pacific Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

H-Cell Compilation Units: ***meters at Mean Lower Low Water***

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via <http://www.ncei.noaa.gov/>.

A. Area Surveyed

This hydrographic survey was acquired in accordance with the requirements defined in the Project Instruction S-E932-BH2-16.

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
39° 0' 9.64" N 76° 29' 41.13" W	38° 59' 36.66" N 76° 29' 7.53" W

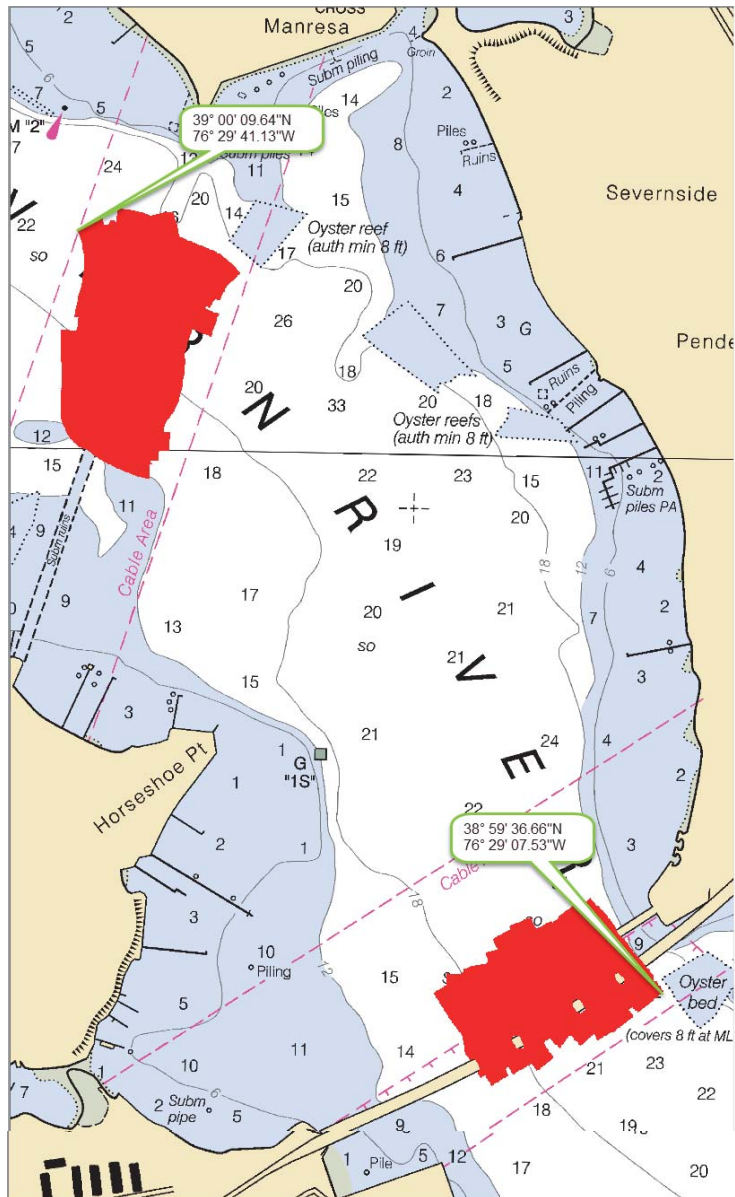


Figure 1: Outline of area surveyed as part of F00670.

B. Survey Purpose

Bay Hydro II was assigned to investigate two submerged ruin areas in the middle of the Severn River, North of Annapolis.

C. Intended Use of Survey

The entire survey is adequate to supersede previous data.

D. Data Acquisition and Processing

Please reference the 2016 BHII Data Acquisition and Processing Report for a complete description of data acquisition and processing systems, survey vessels, quality control procedures, and data processing methods.

E. Uncertainty

Data acquired in F00670 meet multibeam echo sounder (MBES) coverage requirements for object detection, including the five soundings per node data density requirements in section 5.2.2.2 of the Hydrographic Surveys Specifications and Deliverables (HSSD). In order to extract descriptive statistics of the data density achievements, the finalized surface was queried with CARIS and examined in Excel (Table 1). Overall, the required data density was achieved in 99.7% of the nodes.

Total Vertical Uncertainty is within IHO allowable limits.

Resolution	Depth range	Number of nodes	Fewer than five soundings per node	Percent of nodes with greater than five soundings per node
1m	0 - 20m	387,721	995	99.7%
TOTAL:		387,721	995	99.7%

Table 1: Summary table showing the percentage of nodes satisfying the HSSD five soundings density requirement.

F. Results and Recommendations

The following are the largest scale RNC and ENC, which cover the survey area:

Chart	Scale	Edition	Edition Date	LNM Date	NM Date
12283	1:10000	29	08/2014	10/18/2016	10/22/2016

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US5MD32M	1:10000	12	07/06/2012	04/07/2016	NO

F00670 sounding data coincides with 10 charted depths as shown in Figures 2 and 3. F00670 soundings on the northern submerged ruins are deeper than all five charted depths (Figure 2). F00670 soundings on the southern submerged ruins are deeper than three charted depths, shoaler than two (Figure 3). Figures 4 and 5 show surveyed submerged ruins extend farther than charted ruins.

F00670 sounding data coincides with 12 charted depths. F00670 soundings on the northern submerged ruins are deeper than all seven charted depths . F00670 soundings on the southern submerged ruins are deeper than three charted depths, shoaler than two. surveyed submerged ruins extend farther than charted ruins.

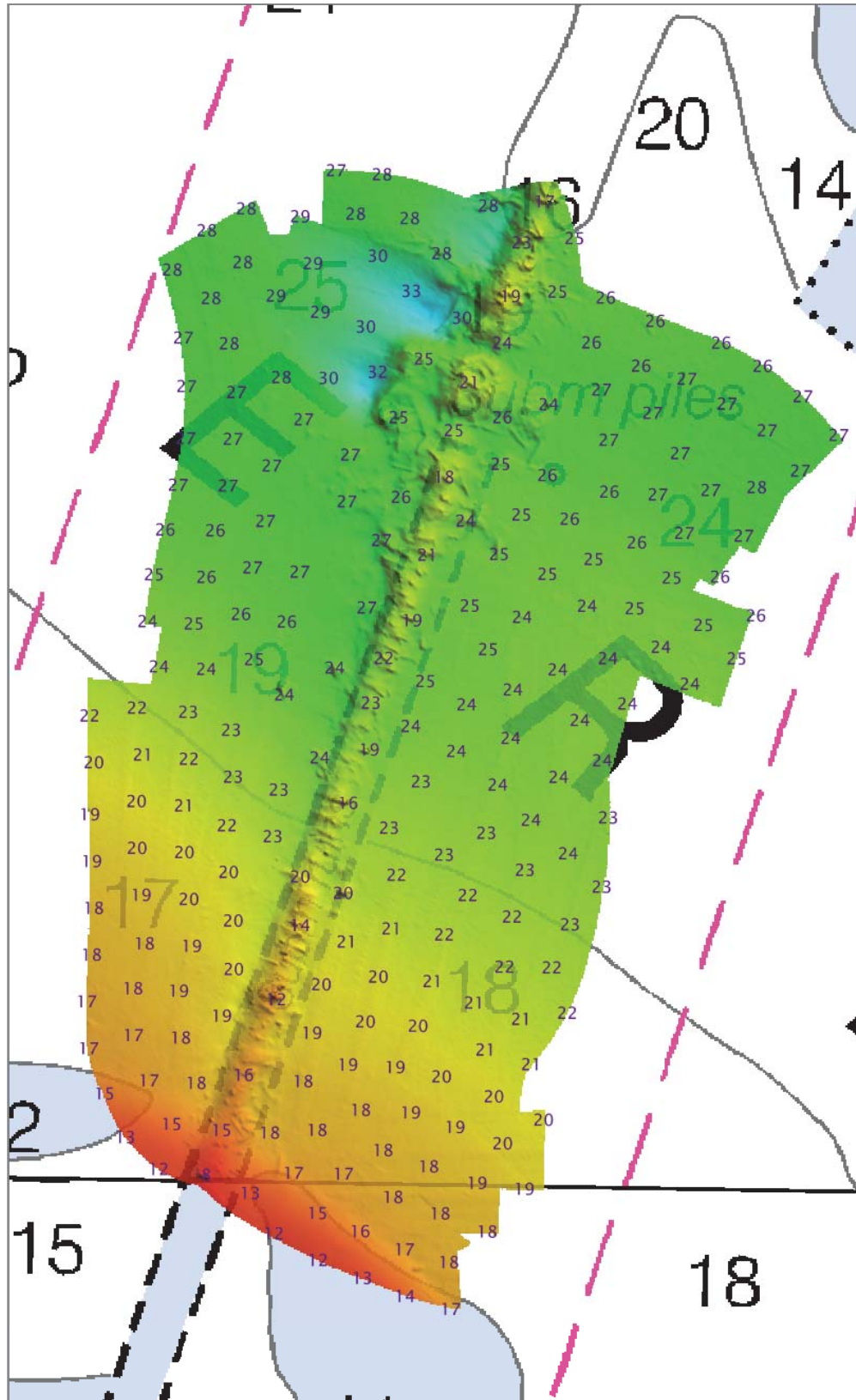


Figure 2: F00670 soundings overlaid with Chart 12283 highlight differences in survey depths compared to charted depths in the northern ruins.

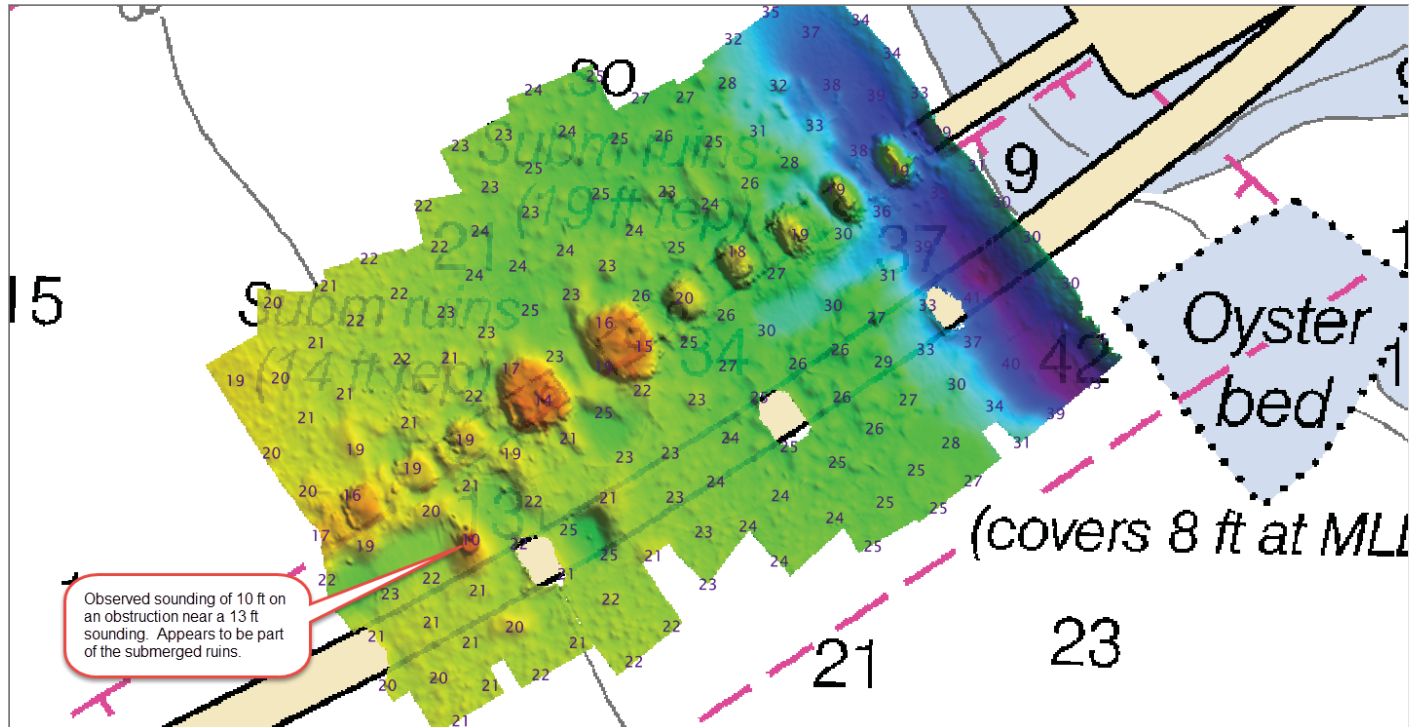


Figure 3: F00670 soundings overlaid on Chart 12283 highlight differences in survey depths compared to charted depths in the southern ruins.

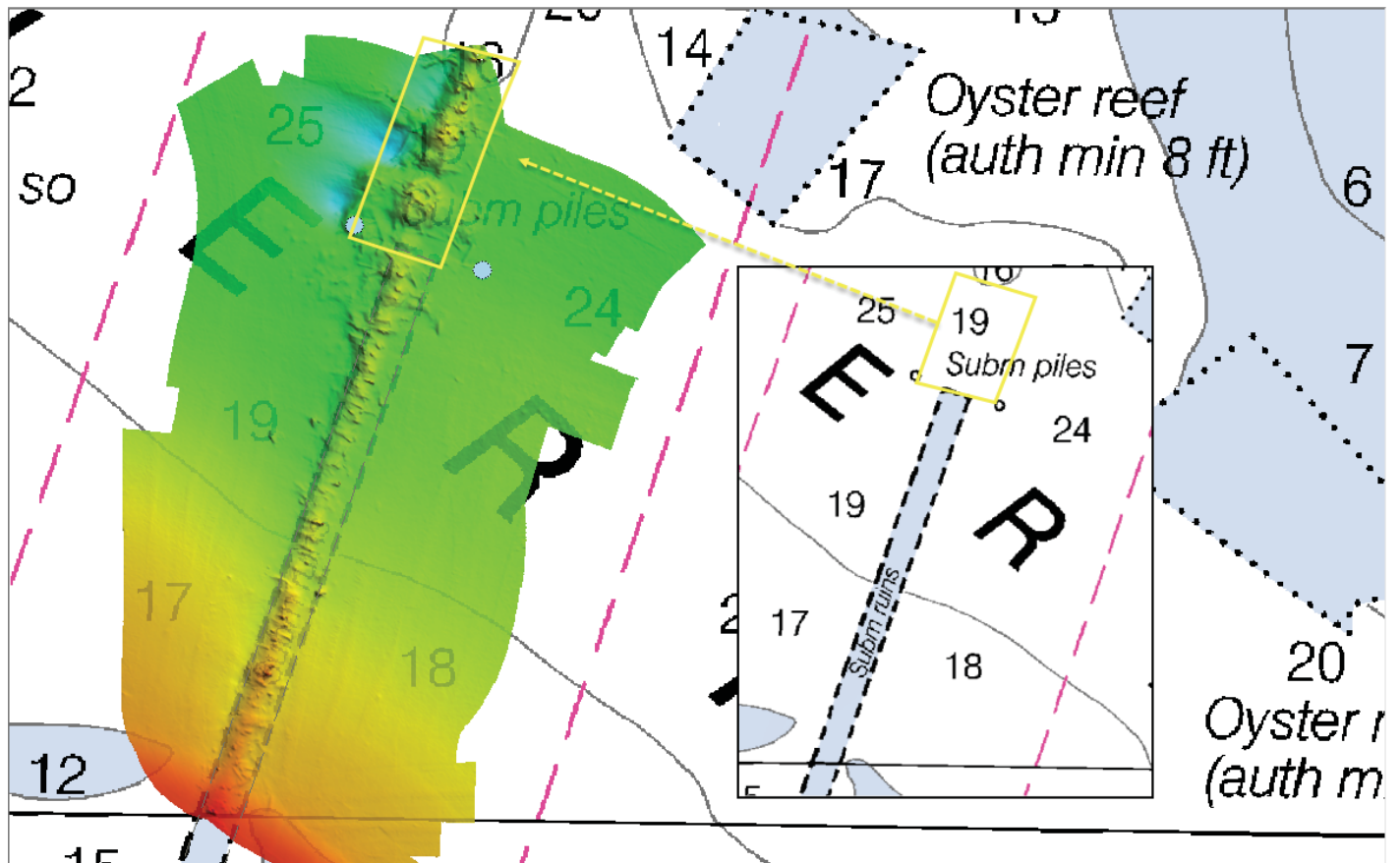


Figure 4: F00670 soundings overlaid on Chart 12283 show additional, extended submerged ruins in the northern portion of the survey.

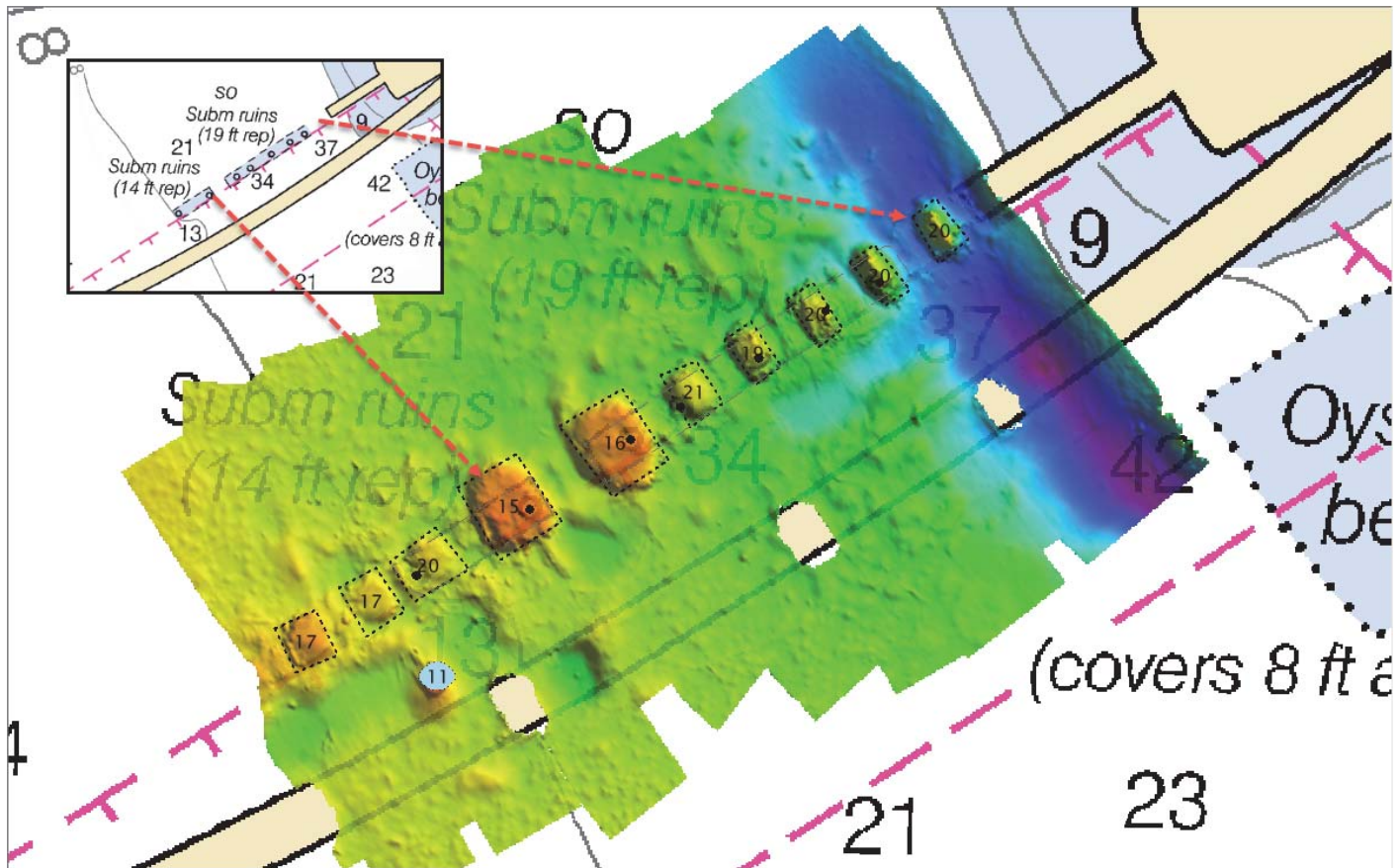


Figure 5: F00670 soundings overlaid on Chart 12283 show additional submerged ruins in the southern portion of the survey.

The following surfaces and/or BAGs were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
F00670_MB_50cm_MLLW	CUBE	50 cm	3.14 m - 13.71 m	NOAA_50cm	MBES
F00670_MB_50cm_MLLW_Final	CUBE	50 cm	2.60 m - 13.71 m	NOAA_50cm	MBES

G. Vertical and Horizontal Control

The vertical datum for this project is Mean Lower Low Water.

The vertical control method used for this survey was Discrete Zoning.

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Station Name	Station ID
Annapolis, MD	8575512

Preliminary tides were accepted as final tides from the station listed above.

Preliminary zoning is accepted as the final zoning for F00670. The Tide Note is attached.

The horizontal datum for this project is North American Datum of 1983 (NAD83). The projection used for this survey is UTM Zone 18N.

The following DGPS Stations were used for horizontal control:

DGPS Stations
Annapolis, MD 301kHz

H. Additional Results

Two obstruction buoys were located within the survey area, likely marking uncharted ruins (Figure 6 and 7)

The buoys were not positioned by the Field Unit and are not charted.

All survey features are referenced and attributed per digital data in the submitted final feature file (FFF).



Figure 6: Two obstruction buoys located in the southern portion of the survey project.




Figure 7: Obstruction buoy and pier in the southern portion of the survey project.

I. Approval

As Chief of Party, field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports.

All field sheets, this Survey Summary Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

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 all 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 with the exception of deficiencies noted in the Survey Summary Report.

Approver Name	Title	Date	Signature
Sarah L Chappel, LTJG	Officer in Charge	12/30/2016	 <small>Digitally signed by CHAPPEL.SARAH.LYNN.1472631272 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=CHAPPEL.SARAH.LYNN.14726312 72 Date: 2017.01.23 07:47:47 -0500'</small>



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : December 20, 2016

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: S-E932-BH2-16
HYDROGRAPHIC SHEET: F00670

LOCALITY: Severn River, MD
TIME PERIOD: December 08, 2016

TIDE STATION USED: 8575512 Annapolis, MD
Lat. 38° 59.0'N Long. 76° 28.9' W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.364 meters

ESTIMATED ZONING ERROR: 0.10 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning for this project was provided under project S-E932-BH2-16. Preliminary zoning is accepted as the final zoning for Registry No. F00670 for the time period of December 08, 2016. Please use the zoning file E932BH22016CORP submitted with the project instructions for S-E932-BH2-16. Zones NCB79 and NCB80 are the applicable zones for F00670.

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 on the 1983-2001 National Tidal Datum Epoch (NTDE).

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CHIEF, PRODUCTS AND SERVICES BRANCH



APPROVAL

PAGE F00670

Data partially meet current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in specific areas as delineated during office processing.

The following products will be sent to NGDC for archive:

- F00670_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- F00670_GeoImage.pdf

The survey evaluation and verification has been conducted according current OCS Specifications.

Approved: _____

Pete Holmberg

Cartographic Team Lead, Pacific Hydrographic Branch

The survey has been approved for dissemination and limited usage of updating NOAA's suite of nautical charts.

Approved: _____

Cecelia Linder

Acting Chief, Pacific Hydrographic Branch