

H12016

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No.

Registry No. H12016

LOCALITY

State Florida

General Locality Tampa Bay

Sublocality East Bay to Bend Channel

2009

CHIEF OF PARTY
Mark J. McMann, NOAA NRT 1

LIBRARY & ARCHIVES

DATE

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|---|---|
| <p style="text-align: center;">U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION</p> <p style="text-align: center;">HYDROGRAPHIC TITLE SHEET</p> | <p>REGISTRY No</p> <p style="text-align: center;">H12016</p> |
| <p>INSTRUCTIONS – The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.</p> | <p>FIELD No: N/A</p> |
| <p>State <u>Florida</u></p> <p>General Locality <u>Tampa Bay</u></p> <p>Sub-Locality <u>East Bay to Bend Channel</u></p> <p>Scale <u>1:10000</u> Date of Survey <u>August 7, 2009 to December 09, 2010</u></p> <p>Instructions dated <u>3/5/2009</u> Project No. <u>OPR-J417-NRT1-09</u></p> <p>Vessel <u>S1212 (NRT 3)</u></p> <p>Chief of party <u>Mark J. McMann, NOAA NRT 1</u></p> <p>Surveyed by <u>Mark J. McMann</u></p> <p>Soundings by <u>ODOM Echotrac CVX2 single-beam and pole-mounted Reson 8125 MultiBeam</u></p> <p>SAR by <u>Kurt Mueller</u> Compilation by <u>Fernando Ortiz</u></p> <p>Soundings compiled in <u>Feet</u></p> | |
| <p>REMARKS: <u>All times are UTC. UTM Zone 17</u></p> <p><u>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. Revisions and end notes in red were generated during office processing. The processing branch concurs with all information and recommendations in the DR unless otherwise noted. Page numbering may be interrupted or non sequential.</u></p> <p><u>All pertinent records for this survey, including the Descriptive Report, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via http://www.ngdc.noaa.gov/.</u></p> | |

DESCRIPTIVE REPORT

to accompany
Basic Hydrographic Survey H12016
East Bay to Bend Channel
OPR-J417-NRT1-09

Year of Survey: 2009 - 2010
Navigation Response Team 1
NOAA Launch S3004
Mark McMann - Team Leader

A. AREA SURVEYED

This is a resubmission of H-12016 and supersedes the original data. The additional SWMB investigations address side scan sonar contacts identified by the Atlantic Hydrographic Branch during processing.¹

This Basic Hydrographic Survey was conducted in accordance with the Project Instructions for OPR-J417-NRT1-09, Tampa Bay, FL. The instructions are dated March 5, 2009.

The regional Navigation Manager has received many requests for hydrographic surveys in the Tampa Bay area. The intent of this survey is to supersede all bathymetry, seafloor features, and bottom characteristics within the assigned survey area.

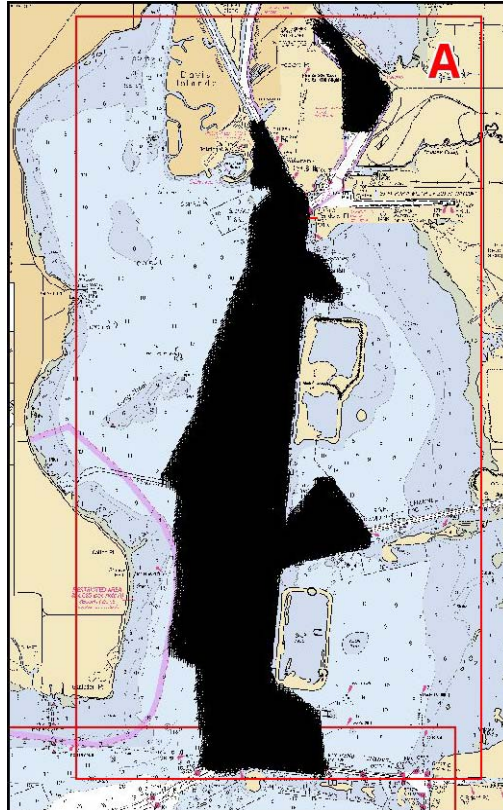
The area surveyed by NRT1, consisted of approximately 5.7 square nautical miles (SNM) of Tampa Bay from East Bay to Bend Channel. Both singlebeam echosounder and side scan sonar were acquired within the survey limits, wherever possible. MultiBeam was used to investigate Side Scan contacts.

Survey Limits for Sheet A, H12016 are as follows:

27°56'06" N 82°25'13" W
27°48'30" N 82°27'47" W

Survey Dates: August 7, 2009 (DN: 211) to December 09, 2010 (DN: 343).

Survey limits are displayed graphically:



B. DATA ACQUISITION AND PROCESSING

B.1. EQUIPMENT

Data were acquired by Navigation Response Team 1 using survey Launch 3004. The vessel was configured as described in the Data Acquisition and Processing Report (DAPR). Major data acquisition systems are summarized below.

NOAA Survey Launch 3004 was used to acquire position, sounding, imagery, and sound velocity. Positions were acquired with a Trimble DSM132 Differential GPS (DGPS) beacon receiver in conjunction with an Applanix POS/MV-V4 Inertial Motion Unit (IMU). Soundings were acquired with an ODOM Echotrac CVX2 single-beam echosounder (SBES) system and a pole-mounted Reson 8125 MultiBeam (SWMB) system. Imagery was acquired with a pole-mounted Klein 5000 side scan sonar system (SSS). Water column and sensor head sound velocity data were obtained using 2 ODOM Digibar systems.

B.2. QUALITY CONTROL

The integrity of the survey data for H12016 was insured by following the Field Procedures Manual, dated May, 2010, and the NOS Hydrographic Surveys Specifications and Deliverables Manual, dated May, 2010.

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey.

Side Scan Sonar

The side scan sonar system frequency used was 455kHz for the Klein 5000 on Launch 3004. The recorder was set to 50 meter range. There were no water depths greater than 25 meters in areas where side scan data was collected.

Daily confidence checks were conducted by observing side scan imagery in the vicinity of known contacts, such as buoys or sand waves. Side scan data were considered satisfactory if these contacts could be distinguished throughout the entire range of the side scan trace. The confidence checks were performed. Coverage of 200% was obtained wherever possible in the required survey areas and where water depth and/or hazards permitted. Side scan sonar coverage was conducted to the 12-foot depth curve where possible.

All side scan contacts were selected during processing in CARIS. Any contacts which were determined to be significant were developed using SWMB.²

Crosslines

Crosslines were collected perpendicular to the main scheme over the length of the project area. A total of 13.0 linear nautical miles (LNM) of crosslines were acquired. This is approximately 10 percent of 100% mainscheme acquisition (121.5 LNM). A Pydro comparison of crossline data and main scheme data showed excellent agreement.

Junctions

No junctioning surveys were provided for comparison with this project. This survey will junction with Sheet "F", which will be completed later in the project.³

B.3. CORRECTIONS TO ECHO SOUNDING

Echosounder data were corrected for sound velocity using the methods defined in the DAPR. A list of sound velocity profiles (SVP) can be found in the Daily Acquisition Log, located in the Separates directory. SVPs have also been added to the Pydro PSS for this project.

C. VERTICAL AND HORIZONTAL CONTROL

C.1. VERTICAL CONTROL

All soundings were reduced to Mean Lower Low Water (MLLW) with preliminary observed water levels and preliminary zoning.

The operating water level stations at St Petersburg, FL (872-6520), Port Manatee, FL (872-6384), Old Port Tampa, FL (872-6607), and McKay Bay Entrance, FL (872-6667) provided water level reducers for this project.

Verified water levels were downloaded using the Fetchtides program and were applied to all soundings for this sheet. Water level corrections were applied to the soundings using CARIS HIPS and SIPS v7.0.

TCARI zoning was provided on the project CD for the original data submission. Due to water level station failures, use of the TCARI grid was suspended in 2010 and .ZDF zoning was supplied for the supplemental data collected in 2010.

A Request for Approved Water Levels letter was sent to Final.Tides@noaa.gov on Dec. 17, 2010 and is included in Appendix IV. Approved Water Levels were received by the NRT on Jan. 21, 2010, approving the preliminary zoning. No reapplication of water level data was necessary.

C.2. HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum 1983 (NAD83), projected using UTM zone 17. The control reference station used for this survey was the USCG DGPS Beacon in the auto-select mode.

Horizontal dilution of precision (HDOP) was monitored daily on Hypack. At no point did HDOP exceed 4.00, and adequate satellite coverage was maintained throughout the survey period.

All positioning equipment was operated in a manner consistent with the manufacturer requirements and as described in the DAPR. There were no equipment malfunctions which affected the positional quality of the data.

D. RESULTS AND RECOMMENDATIONS

D.1. CHART COMPARISON

There is one chart and one ENC affected by this survey:⁴

General Agreement with Charted soundings

| Chart | Edition | Print Date | Scale |
|--------------|----------------|-------------------|--------------|
| 11416 | 10th | 10/2008 | 1:40,000 |

| ENC Cell | Last Updated | Corresponding Chart | Version |
|-----------------|---------------------|----------------------------|----------------|
| US5FL12M | 04/16/2007 | 11383 | 1 |

Comparison with the latest chart revealed excellent agreement with charted soundings, with current survey soundings being 1-2 feet of the chart.

A 22 foot sounding charted at Lat. 27° 55' 21"N, Lon. 82° 25' 19" W, was not found. Single beam hydrography in the area indicated depths of 42-45 feet. The hydrographer recommends removal of the charted 22 foot sounding and charting current survey soundings in the area.⁵

A charted 10' shoal at 27° 53' 32"N, 82° 26' 08"W was investigated with 20 meter line spacing single beam echo sounder and a least depth of 9' was found. The extent of the shoal is smaller than charted. The hydrographer recommends charting current survey soundings in the area.⁶

A charted 5' shoal at 27° 53' 10"N, 82° 26' 14"W was developed with reduced SBES line spacing and a least depth of 7' was found. The hydrographer recommends removing the charted shoal and charting current survey soundings in the area.⁷

Charted pile at Lat. 27° 50' 47"N, Lon. 82° 26' 01"W was not found during side scan operations. The hydrographer recommends removing the pile.⁸

A charted "31 ½ FT" sounding at Lat. 27° 50' 39"N, Lon. 82° 26' 34"W, at the entrance to the Alafia River Channel was covered by 40 meter spacing with single beam echosounder and a least depth of 32' was found. The hydrographer recommends charting current survey soundings and removing the 31 ½ FT note.⁹

Two charted 7' soundings, at Lat. 27° 50' 36"N, Lon. 82° 27' 03"W, and Lat. 27° 50' 27"N, Lon. 82° 27' 09"W were investigated with reduced line spacing and least depths were found to be 13 to 15 feet. The hydrographer recommends removal of the 7' soundings and charting current survey soundings in the area.¹⁰

A charted 11' bulls-eye shoal at Lat. 27° 49' 13"N, Lon. 82° 27' 03"W was investigated with reduced line spacing single beam echosounder and least depths were found to be 13'. The hydrographer recommends removal of the shoal and charting current survey depths in the area.¹¹

A charted shoal at Lat. 27° 49' 12", Lon. 82° 26' 35" was investigated with reduced line spacing single beam echosounder and least depths of 7 feet were found. The hydrographer recommends removal of the charted shoal and charting current survey soundings in the area.¹²

Numerous soundings in the Cut-C Channel were found to be shoaler than the depths on the Tampa Bay Channel Depths Table. Contact was made with the US Army Corps of Engineers through Mr. Michael Henderson, the Regional Navigation Manager, and the Corps stated dredging of the Cut C Channel is scheduled for this year. Copies of the emails are included in Supplemental Correspondence, Section V of the Appendices.¹³

There are 17 new features recommended for charting. Three are DTONs. The details are contained in the Survey Features Report located in Section II of the Appendices to the Descriptive Report.

AWOIS Item Investigations

There were 3 AWOIS items assigned to NRT-1 in Sheet A. The radius of these items were covered using 200% SSS to the extent possible.

Results of the AWOIS investigations are contained in Appendix II.¹⁴

Dangers to Navigation

Three DTONs were identified in this survey.

An uncharted pile at Lat. 27° 50' 42"N, Lon. 82° 27' 34"W with a least depth of 1.88m (6.2') was investigated and positioned with MultiBeam echosounder. This is an area of charted 13-14' soundings.¹⁵

A dredge pipe laying flat on the bottom at Lat. 27° 52' 37"N, Lon. 82° 26' 25"W had a least depth of 4.7m (15.4') in an area of charted 18 depths. It was 20 meters outside of the ship channel.¹⁶

An unknown obstruction that appears to be a pipe or pile was located at 27° 55' 30.6" N, 082° 25' 25.8" W. A least depth of 13 feet was found in an area of charted 24 foot depths. The feature is in an undredged part of East Bay.

The DTON Reports are located in Section I of the Appendices.¹⁷

Shoreline

No shoreline features were investigated by the field party.

D. 2. ADDITIONAL RESULTS

Aids to Navigation and Other Detached Positions

All Aids to Navigation in the survey area were found to be on station and serving their intended purpose.¹⁸ The field party has no recommendations on these Aids to Navigation.¹⁹

Two charted private maintained buoys, YC "D" and YC "C" were found as charted but were not positioned. An ATON file for the project, provided by Marine Chart Division, will be submitted with a later survey.

Bottom Samples Results

Bottom samples were done on day 2009_272 (09/30/2009) on sheet A. The distance between samples did not exceed 2000 meters. A listing of the bottom samples is included in the Supplemental Survey Data directory.²⁰

Ferry Routes

There are no ferry routes in the survey area.

Submarine Cables and Pipelines

No charted submarine pipelines were located in the survey area.

Bridges and Overhead Cables

There were no bridges or overhead cables in the survey area.

APPROVAL SHEET

OPR-J417-NRT1-10
Florida
Tampa Bay
Eat Bay to Bend Channel
Survey Registry No. H-12016

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

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



Digitally signed by Mark J. McMann
DN: cn=Mark J. McMann, o=NRT-1,
ou=NSD, email=Mark.McMann@noaa.
gov, c=US
Date: 2011.02.02 10:48:14 -06'00'

Submitted: _____

Mark J. McMann - Team Leader
Navigation Response Team 1

Revisions and Corrections Compiled During Office Processing and Certification.

¹ Concur with clarification. Survey H12016 was resubmitted to and compiled at PHB.

² During compilation the following base surface were used;

| Resolutions | Source surfaces File Name |
|-------------|------------------------------------|
| 0.50cm | H12016_MBES_50cm_Office_Final.csar |
| 5m | H12016_SBES_Base_5m_Final.csar |

³ Concur with clarification. No junctions as no data has been collected for sheet “F”.

⁴ Concur with clarification. During office processing and certification survey H12016 was also compared with the following charts.

| Chart | Kapp | Scale | Edition | Edition Date | NTM Date |
|-------|------|----------|------------------|-----------------|------------|
| 11416 | 2984 | 1:20,000 | 10 th | 10/01/2008 | 10/08/2011 |
| 11416 | 2983 | 1:40,000 | 10 th | 10/01/2008 | 10/08/2011 |

⁵ Concur with clarification. A 45 ft sounding was found after the final tide correction. Chart sounding as depicted in the HCell.

⁶ Do not concur. A 10.8 ft was found after the final tide correction. Chart sounding as depicted in the HCell.

⁷ Do not concur. An 8 ft was found after the final tide correction. Chart sounding as depicted in the HCell.

⁸ Concur with clarification. A blue note was added to the HCell to remove the charted pile.

⁹ Do not concur. Retain charted 31 ft. since Hillsborough Bay; Alafia River Entrance Channel is a maintained channel.

¹⁰ Concur with clarification. 12ft and 14 ft soundings were found after the final tide correction. Chart as soundings as depicted in the HCell.

¹¹ Concur with clarification. A 15 ft sounding was found after the final tide correction. Chart soundings as depicted in the HCell.

¹² Post processing of data reveals deeper water depths at 27-49-12.00 N, 082-26-35.00W than charted soundings. Chart soundings as depicted in the HCell.

¹³ The supplemental correspondence is attached to this report.

¹⁴ AWOIS report is attached to this document.

¹⁵ Post processing of data reveals shoaler water depths than initially reported. Chart obstruction as depicted in the HCell.

¹⁶ Post processing of data reveals shoaler water depths than initially reported. Chart obstruction as depicted in the HCell.

¹⁷ DTONs have been applied to the latest charts. However, the HCell contains modifications and comments to these DTONs. The DTON report is attached to this report.

¹⁸ Chart ATONS according to the latest ATONIS information.

¹⁹ Concur with clarification, Four BCNSPP features were addressed by the field and are included in the HCell.

²⁰ Eight bottom samples are included in the HCell to be charted. A general blue note was added to the HCell to retain all charted bottom samples.

1 - Danger To Navigation

DTON REPORT #1, Survey H12016

Registry Number: H12016
State: Florida
Locality: Tampa Bay
Sub-locality: East Bay to Bend Channel
Project Number: OPR-J417-NRT1-09
Survey Date: 10/27/2009

Charts Affected

| Number | Edition | Date | Scale (RNC) | RNC Correction(s)* |
|--------|---------|------------|-----------------------|---|
| 11416 | 10th | 10/01/2008 | 1:40,000 (11416_1) | USCG LNM: 04/07/2009 (05/05/2009) NGA NTM: 04/10/2004 (05/09/2009) |
| 11412 | 44th | 06/01/2006 | 1:80,000 (11412_1) | [L]NTM: ? |
| 11400 | 36th | 01/01/2006 | 1:456,394 (11400_1) | [L]NTM: ? |
| 1114A | 36th | 01/01/2006 | 1:456,394 (1114A_1) | [L]NTM: ? |
| 11451 | 33rd | 09/01/2007 | 1:495,362 (11451_17) | [L]NTM: ? |
| 11006 | 32nd | 08/01/2005 | 1:875,000 (11006_1) | [L]NTM: ? |
| 11013 | 47th | 02/01/2008 | 1:1,200,000 (11013_1) | [L]NTM: ? |
| 411 | 52nd | 09/01/2007 | 1:2,160,000 (411_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 | 569/160 DTON 6.1 ft pile Uncharted | Obstruction | 1.88 m | 27° 50' 42.7" N | 082° 27' 32.4" W | --- |
| 1.2 | 503/164 DTON 15.6 ft pipe Uncharted | Obstruction | 4.76 m | 27° 52' 37.0" N | 082° 26' 25.2" W | --- |

1.1) Profile/Beam - 569/160 from h12016 / s3004_reson8125 / 2009-300 / 2009_300_mb002_1449

DANGER TO NAVIGATION

Survey Summary

Survey Position: 27° 50' 42.7" N, 082° 27' 32.4" W
Least Depth: 1.88 m (= 6.17 ft = 1.028 fm = 1 fm 0.17 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.961 m ; TVU (TPEv) ± 0.105 m
Timestamp: 2009-300.14:49:35.853 (10/27/2009)
Survey Line: h12016 / s3004_reson8125 / 2009-300 / 2009_300_mb002_1449
Profile/Beam: 569/160
Charts Affected: 11416_1, 11412_1, 1114A_1, 11400_1, 11451_17, 11006_1, 11013_1, 411_1

Remarks:

DTON. Submerged pile near the restricted military zone on the south west side of Hillsborough Bay. The dangerous feature is located approximately 550 m northeast of the Alafia River Channel Rear Range Light, and 110m east outside of the restricted zone. Least depth measurement of contact is 1.88 m (6.1 ft) in charted 14 ft depths. The feature was located with side scan sonar and developed using a multibeam echosounder. The feature appears to be a pile 10 m long and up to 2 m wide.

Feature Correlation

| Address | Feature | Range | Azimuth | Status |
|---|---------|-------|---------|---------------------|
| h12016/s3004_reson8125/2009-300/2009_300_mb002_1449 | 569/160 | 0.00 | 000.0 | Primary |
| h12016/s3004_klein5000_100/2009-223/tb090811164600 | 0001 | 2.82 | 024.9 | Secondary |
| h12016/s3004_klein5000_200/2009-238/tb090826170200 | 0001 | 3.13 | 028.3 | Secondary (grouped) |

Hydrographer Recommendations

Recommend charting a sounding on an obstruction at the position as surveyed.

Cartographically-Rounded Depth (Affected Charts):

6ft (11416_1, 11412_1, 11451_17)

1fm (1114A_1, 11400_1, 11006_1, 11013_1, 411_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
SORDAT - 20091028
SORIND - US,US,SURVEY,H12016
STATUS - 1:permanent
TECSOU - 3:found by multi-beam
VALSOU - 1.880 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

1.2) Profile/Beam - 503/164 from h12016 / s3004_reson8125 / 2009-300 / 2009_300_mb002_1515

DANGER TO NAVIGATION

Survey Summary

Survey Position: 27° 52' 37.0" N, 082° 26' 25.2" W
Least Depth: 4.76 m (= 15.63 ft = 2.606 fm = 2 fm 3.63 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.964 m ; TVU (TPEv) ± 0.112 m
Timestamp: 2009-300.15:15:29.397 (10/27/2009)
Survey Line: h12016 / s3004_reson8125 / 2009-300 / 2009_300_mb002_1515
Profile/Beam: 503/164
Charts Affected: 11416_1, 11412_1, 1114A_1, 11400_1, 11451_17, 11006_1, 11013_1, 411_1

Remarks:

DTON. Dredge pipe element outside cut "C" channel of Hillsborough Bay. Dangerous item is located approximately 330 m south of buoy R "26". Least depth measurement of contact is 4.76 m (15.6 ft) in charted 18 ft depths. The feature was located with side scan sonar and developed using a multibeam echosounder. The feature appears to be a pipe 7 m long and 2.5 m wide and laying flat on the bottom.

Feature Correlation

| Address | Feature | Range | Azimuth | Status |
|---|---------|-------|---------|---------------------|
| h12016/s3004_reson8125/2009-300/2009_300_mb002_1515 | 503/164 | 0.00 | 000.0 | Primary |
| h12016/s3004_klein5000_100/2009-216/tb090804143700 | 0002 | 0.44 | 144.0 | Secondary (grouped) |
| h12016/s3004_klein5000_200/2009-236/tb090824133200 | 0002 | 3.64 | 078.9 | Secondary (grouped) |

Hydrographer Recommendations

Recommend charting a sounding on an obstruction at the position as surveyed.

Cartographically-Rounded Depth (Affected Charts):

15ft (11416_1, 11412_1, 11451_17)

2 ½fm (1114A_1, 11400_1, 11006_1, 11013_1, 411_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
SORDAT - 20091028
SORIND - US,US,SURVEY,H12016
TECSOU - 3:found by multi-beam
VALSOU - 4.765 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

DTON REPORT #2, Survey H12016

Registry Number: H12016
State: Florida
Locality: Tampa Bay
Sub-locality: East Bay to Bend Channel
Project Number: OPR-J417-NRT1-09
Survey Date: 12/09/2010

Charts Affected

| Number | Edition | Date | Scale (RNC) | RNC Correction(s)* |
|--------|---------|------------|-----------------------|---|
| 11416 | 10th | 10/01/2008 | 1:20,000 (11416_2) | [L]NTM: ? |
| 11416 | 10th | 10/01/2008 | 1:40,000 (11416_1) | USCG LNM: 04/07/2009 (05/05/2009) NGA NTM: 04/10/2004 (05/09/2009) |
| 11412 | 44th | 06/01/2006 | 1:80,000 (11412_1) | [L]NTM: ? |
| 11400 | 36th | 01/01/2006 | 1:456,394 (11400_1) | [L]NTM: ? |
| 1114A | 36th | 01/01/2006 | 1:456,394 (1114A_1) | [L]NTM: ? |
| 11451 | 33rd | 09/01/2007 | 1:495,362 (11451_17) | [L]NTM: ? |
| 11006 | 32nd | 08/01/2005 | 1:875,000 (11006_1) | [L]NTM: ? |
| 11013 | 47th | 02/01/2008 | 1:1,200,000 (11013_1) | [L]NTM: ? |
| 411 | 52nd | 09/01/2007 | 1:2,160,000 (411_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 | 660/105 1.5) DTON uncharted obstruction | Obstruction | 3.95 m | 27° 55' 30.6" N | 082° 25' 25.8" W | --- |

1.1) Profile/Beam - 660/105 from h12016 / s3004_reson8125 / 2010-343 / _000_1604

DANGER TO NAVIGATION

Survey Summary

Survey Position: 27° 55' 30.6" N, 082° 25' 25.8" W
Least Depth: 3.95 m (= 12.96 ft = 2.160 fm = 2 fm 0.96 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.962 m ; **TVU (TPEv)** ± 0.266 m
Timestamp: 2010-343.16:04:39.690 (12/09/2010)
Survey Line: h12016 / s3004_reson8125 / 2010-343 / _000_1604
Profile/Beam: 660/105
Charts Affected: 11416_2, 11416_1, 11412_1, 1114A_1, 11400_1, 11451_17, 11006_1, 11013_1, 411_1

Remarks:

DTON. Uncharted and unknown obstruction.

Feature Correlation

| Address | Feature | Range | Azimuth | Status |
|--|---------|-------|---------|-----------|
| h12016/s3004_reson8125/2010-343/_000_1604 | 660/105 | 0.00 | 000.0 | Primary |
| h12016/s3004_klein5000_100/2009-223/tb090811134200 | 0001 | 8.79 | 026.6 | Secondary |

Hydrographer Recommendations

Chart obstruction per current survey data.

Cartographically-Rounded Depth (Affected Charts):

13ft (11416_2, 11416_1, 11412_1, 11451_17)

2fm (1114A_1, 11400_1, 11006_1, 11013_1, 411_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
 QUASOU - 6:least depth known
 SORDAT - 20101209

SORIND - US,US,SURVEY,H12016

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 3.951 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

H12016 DR_Awois Feature Report

Registry Number: H12016
State: Florida
Locality: Tampa Bay
Sub-locality: East Bay to Bend Channel
Project Number: OPR-J417-NRT1-09
Survey Dates: 10/27/2009 - 10/21/2010

Charts Affected

| Number | Edition | Date | Scale (RNC) | RNC Correction(s)* |
|--------|---------|------------|-----------------------|---|
| 11416 | 10th | 10/01/2008 | 1:40,000 (11416_1) | USCG LNM: 04/07/2009 (05/05/2009) NGA NTM: 04/10/2004 (05/09/2009) |
| 11412 | 44th | 06/01/2006 | 1:80,000 (11412_1) | [L]NTM: ? |
| 11400 | 36th | 01/01/2006 | 1:456,394 (11400_1) | [L]NTM: ? |
| 1114A | 36th | 01/01/2006 | 1:456,394 (1114A_1) | [L]NTM: ? |
| 11451 | 33rd | 09/01/2007 | 1:495,362 (11451_17) | [L]NTM: ? |
| 11006 | 32nd | 08/01/2005 | 1:875,000 (11006_1) | [L]NTM: ? |
| 11013 | 47th | 02/01/2008 | 1:1,200,000 (11013_1) | [L]NTM: ? |
| 411 | 52nd | 09/01/2007 | 1:2,160,000 (411_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 | AWOIS #10061 | AWOIS | [no data] | [no data] | [no data] | --- |
| 1.2 | 419/232 AWOIS #10062 | Obstruction | 3.10 m | 27° 52' 10.3" N | 082° 26' 25.9" W | 10062 |
| 1.3 | 768/1 1.2) AWOIS #10063 | Wreck | 4.30 m | 27° 52' 46.2" N | 082° 26' 21.7" W | 10063 |

1 - DR_AWOIS

1.1) AWOIS #10061 - AWOIS #10061

No Primary Survey Feature for this AWOIS Item

Search Position: 27° 50' 47.4" N, 082° 26' 33.7" W
Historical Depth: 6.25 m
Search Radius: 50
Search Technique: S2, ES, MB
Technique Notes: [None]

History Notes:

H-10709/96--OPR-J343-AHP; A CONCRETE BEAM WAS FOUND. LEAST DEPTH WAS 21 FEET MLLW IN LAT. 27-50-46.04N, LONG. 82-26-34.39W. ENTERED 9/98 MCR

S00012/02 - 200% SSS acquired over AWOIS #10061. SSS imagery supports AWOIS History.

UPDATED 5/22/2007 JCM

Entire AWOIS # 10061 radius developed with 200%SSS coverage. No contact detected within AWOIS radius in SSS data. Updated 12/28/2010 ABP

Survey Summary

Charts Affected: 11416_1, 11412_1, 1114A_1, 11400_1, 11451_17, 11006_1, 11013_1, 411_1

Remarks:

Entire AWOIS # 10061 radius developed with 200%SSS coverage. No contact detected within AWOIS radius in SSS data.

Feature Correlation

| Address | Feature | Range | Azimuth | Status |
|--------------|---------------|-------|---------|---------|
| AWOIS H12016 | AWOIS # 10061 | 0.00 | 000.0 | Primary |

Hydrographer Recommendations

Hydrographer recommends removing Obstruction from chart and update depths per digital data.

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: SORDAT - 20101209

SORIND - US,US,SURVEY, H12016

TECSOU - 13:swept by side-scan sonar

VALSOU - 6.25 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

1.2) 419/232 AWOIS #10062

Primary Feature for AWOIS Item #10062

Search Position: 27° 52' 10.6" N, 082° 26' 27.2" W
Historical Depth: 3.05 m
Search Radius: 50
Search Technique: MB, S2, ES
Technique Notes: [None]

History Notes:

HISTORY

H-10709/96--OPR-J343-AHP; UNKNOWN OBSTR. FOUND IN POS.27-52-10.6 N, 82-26-27.23 W WITH A LEAST DEPTH OF 10 FEET MLLW. ENTERED 9/98 MCR

Survey Summary

Survey Position: 27° 52' 10.3" N, 082° 26' 25.9" W
Least Depth: 3.10 m (= 10.16 ft = 1.693 fm = 1 fm 4.16 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.964 m ; TVU (TPEv) ± 0.132 m
Timestamp: 2009-300.15:07:35.939 (10/27/2009)
Survey Line: h12016 / s3004_reson8125 / 2009-300 / 2009_300_mb005_1507
Profile/Beam: 419/232
Charts Affected: 11416_1, 11412_1, 1114A_1, 11400_1, 11451_17, 11006_1, 11013_1, 411_1

Remarks:

Charted Obstruction. Contact detected in 200% SSS coverage and investigated using Multibeam Echosounder. Item within radius of AWOIS #10062.

Feature Correlation

| Address | Feature | Range | Azimuth | Status |
|---|---------------|-------|---------|---------------------|
| h12016/s3004_reson8125/2009-300/2009_300_mb005_1507 | 419/232 | 0.00 | 000.0 | Primary |
| h12016/s3004_klein5000_200/2009-224/tb090812162500 | 0001 | 10.60 | 075.4 | Secondary (grouped) |
| AWOIS H12016 | AWOIS # 10062 | 38.29 | 107.1 | Secondary (grouped) |
| h12016/s3004_klein5000_200/2009-236/tb090824133200 | 0003 | 47.07 | 116.1 | Secondary (grouped) |
| h12016/s3004_klein5000_100/2009-216/tb090804143700 | 0003 | 54.40 | 114.6 | Secondary (grouped) |

Hydrographer Recommendations

Hydrographer recommends updating Charted Obstruction according to the position and the depth per digital data.

Cartographically-Rounded Depth (Affected Charts):

10ft (11416_1, 11412_1, 11451_17)

1 ¾fm (1114A_1, 11400_1, 11006_1, 11013_1, 411_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
QUASOU - 6:least depth known
SORDAT - 20101209
SORIND - US,US,SURVEY,H12016
STATUS - 1:permanent
TECSOU - 3:found by multi-beam
VALSOU - 3.096 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

1.3) 768/1 1.2) AWOIS #10063

Primary Feature for AWOIS Item #10063

Search Position: 27° 52' 46.2" N, 082° 26' 24.5" W
Historical Depth: 6.40 m
Search Radius: 50
Search Technique: MB, S2, ES
Technique Notes: [None]

History Notes:

HISTORY

H-10709/96--OPR-J343-AHP; BUOY ANCHOR FOUND WITH A LEAST DEPTH OF 1
 21 FEET MLLW IN LAT. 27-52-46.16N, LONG. 82-26-24.51W. ENTERED 9/98 MCR

Survey Summary

Survey Position: 27° 52' 46.2" N, 082° 26' 21.7" W
Least Depth: 4.30 m (= 14.10 ft = 2.350 fm = 2 fm 2.10 ft)
TPU (±1.96σ): **THU (TPEh)** ±1.968 m ; **TVU (TPEv)** ±0.299 m
Timestamp: 2010-294.16:10:33.509 (10/21/2010)
Survey Line: h12016 / s3004_reson8125 / 2010-294 / _000_1609
Profile/Beam: 768/1
Charts Affected: 11416_1, 11412_1, 1114A_1, 11400_1, 11451_17, 11006_1, 11013_1, 411_1

Remarks:

AWOIS #10063. After Multibeam Sonar development, wreck was found at very edge of AWOIS radius.

Feature Correlation

| Address | Feature | Range | Azimuth | Status |
|---|---------------|-------|---------|---------------------|
| h12016/s3004_reson8125/2010-294/_000_1609 | 768/1 | 0.00 | 000.0 | Primary |
| AWOIS H12016 | AWOIS # 10063 | 76.42 | 088.4 | Secondary (grouped) |

Hydrographer Recommendations

update AWOIS per current survey least depth and position.

Cartographically-Rounded Depth (Affected Charts):

14ft (11416_1, 11412_1, 11451_17)

2 ¼fm (1114A_1, 11400_1, 11006_1, 11013_1, 411_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 2:dangerous wreck
CONVIS - 2:not visual conspicuous
QUASOU - 6:least depth known
SORDAT - 20101209
SORIND - US,US,SURVEY,H12016
STATUS - 1:permanent
TECSOU - 3:found by multi-beam
VALSOU - 4.298 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

From: "Holland, Lisa A SAJ" <Lisa.A.Holland@usace.army.mil>
To: "Michael Henderson" <Michael.Henderson@noaa.gov>; <Rick.I.McMillen@usace.army.mil>
Cc: <Aurel.Piantanida@noaa.gov>; <Mark.Mcman@noaa.gov>; <Howard.Danley@noaa.gov>;
 <Steve.Soherr@noaa.gov>; <Slf@tampaport.com>; <a.thompson@tampabaypilots.com>;
 <tfluke@internationalship.com>; <Sean.Reilly@uscg.mil>; <Brian.G.Knapp@uscg.mil>;
 <Jessica.C.Crandell@uscg.mil>; <John.Nyberg@noaa.gov>; <Ed.Martin@noaa.gov>;
 <Edward.T.Ayoub@uscg.mil>; "Keiser, Jacqueline J SAJ" <Jacqueline.J.Keiser@usace.army.mil>;
 "Holland, Lisa A SAJ" <Lisa.A.Holland@usace.army.mil>; <Troy.A.Dillman@uscg.mil>
Sent: Friday, December 11, 2009 10:32 AM
Subject: RE: Shoal Depths in Cut C - Tampa Bay
 Mike,

Mr. McMillen is deployed.

=====

USACE is dredging cut c this year.

W912EP-09-B-0022

Title: MAINTENANCE DREDGING, PORT TAMPA, 43 AND 34 FOOT PROJECT, CUT C,
 PORT

SUTTON, SPARKMAN UPPER CHANNEL AND THE YBOR CHANNEL

Location: HILLSBOROUGH COUNTY, FLORIDA

Issue Date: 7/23/2009

Lisa A. Holland
 Civil Engineering Technician
 Hydrographic Survey Branch
 (Attn: CESAJ-OD-H)
 US Army Engineer District
 PO Box 4970
 Jacksonville FL 32232
 Phone: (904) 232-1059
 Fax: (904) 232-3696
 Cell: (904) 792-8594
 Alternate Cell: (508) 274-4291
 Email: lisa.a.holland@usace.army.mil
<http://www.saj.usace.army.mil/Divisions/Operations/Branches/HydroSurvey/hydro.php>

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

From: Michael Henderson [mailto:Michael.Henderson@noaa.gov]

Sent: Friday, December 11, 2009 11:22 AM

To: 'Rick.I.McMillen@usace.army.mil'

Cc: Holland, Lisa A SAJ; 'aurel.piantanida@noaa.gov'; 'mark.mcman@noaa.gov';

'michael.henderson@noaa.gov'; 'howard.danley@noaa.gov';

'steve.soherr@noaa.gov'; 'Slf@tampaport.com';

'a.thompson@tampabaypilots.com'; 'tfluke@internationalship.com';

'Sean.Reilly@uscg.mil'; 'Brian.G.Knapp@uscg.mil';

'Jessica.C.Crandell@uscg.mil'; 'John.nyberg@noaa.gov'; 'ed.martin@noaa.gov'

Subject: Re: Shoal Depths in Cut C - Tampa Bay

Rick - greetings from Poncé.

I just received these attachments from our hydro team in Tampa Bay. As I'm on the road and working from BlackBerry®, I only have addresses for you and Lisa.

Appreciate any assist your staff can provide us on data that's more update than existing tables for channel.

I will have access to my laptop ~1600 ET and will return to Tampa tomorrow afternoon.

MEH

Michael Henderson NOAA
P 727-824-5396 C 727-772-3708
nauticalcharts.noaa.gov
hurricanes.gov
Sent from BlackBerry®

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

From: Mark Mcmann <Mark.Mcmann@noaa.gov>

To: Michael Henderson <Michael.Henderson@noaa.gov>; Aurel Piantanida <Aurel.Piantanida@noaa.gov>

Sent: Fri Dec 11 12:02:52 2009

Subject: Shoal Depths

Mike,

I'm attaching graphics of the areas where we found depths shoaler than the table depths on the chart. Please let me know if the Army Corps is aware of these depths or if they should be reported as Dangers To Navigation.

Thanks,

Mark

From: "Michael Henderson" <Michael.Henderson@noaa.gov>
To: "Rayaprolu, Sirisha SAJ" <Sirisha.Rayaprolu@usace.army.mil>
Cc: "Holland, Lisa A SAJ" <Lisa.A.Holland@usace.army.mil>
Sent: Thursday, October 07, 2010 12:35 PM
Subject: Re: Cuts A, C and Big Bend Channel

Sirisha: thanks for the update, appreciate it a bunch.

Cheers, MEH

NOAA Navigation Manager – S.FL & U.S. Caribbean
263 13th Avenue South
St. Petersburg FL 33701-5505
727-824-5396 Phone
727-772-3708 Cell
727-824-5320 Fax
nauticalcharts.noaa.gov
hurricanes.gov

On 10/7/2010 2:58 PM, Rayaprolu, Sirisha SAJ wrote:

Mr. Henderson,

Per your request, please note the following:

Tampa Big Bend: is not dredged by the USACE, it is dredged by the local sponsor
Cut A: is scheduled to be dredged in 2010, the contract was awarded 29 Sep 2010; it was last dredged in 1996
Cut C: was last dredged in 2009

Please let me know if you have any questions.

Thank you,
Sirisha

Sirisha Rayaprolu
U.S. Army Corps of Engineers
Navigation Branch
Operations Division

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

To: Mora, Millan A SAJ <Millan.A.Mora@usace.army.mil>
<<mailto:Millan.A.Mora@usace.army.mil>>
<<mailto:Millan.A.Mora@usace.army.mil>>
<<mailto:Millan.A.Mora@usace.army.mil>>

Milan,

Could you give me information on when Cut A, Cut C and Big Bend
Channels were
last dredged?

Thanks,

Mark



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : January 11, 2011

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-J417-NRT1-2010
HYDROGRAPHIC SHEET: H12016 Rev

LOCALITY: East Bay to Bend Channel, Tampa Bay, FL
TIME PERIOD: October 21 - December 9, 2010

TIDE STATION USED: 872-6520 St. Petersburg, FL
Lat. 27° 45.6' N Long. 82° 37.6' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.602 meters

TIDE STATION USED: 872-6667 McKay Bay, FL
Lat. 27° 54.8' N Long. 82° 25.5' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.722 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project
OPR-J417-NRT1-2010

Please use the zoning file "J417NRT12010CORP" submitted with the project
instructions for J417NRT12010. Zones TB88, TB88A, TB89, TB89A, and TB99 are
the applicable zones for H12016_Rev.

- 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).
- Note 2:** Final tidal zoning for the survey points from July 30 to
October 28, 2009 was provided for sheet H12016 and emailed
on December 10, 2009. Please refer to that Final Tide Note.

Peter J. Stone

Digitally signed by Peter J. Stone
DN: cn=Peter J. Stone, o=NOAA/NOS/CO-OPS, ou=Oceanographic
Division, email=peter.stone@noaa.gov, c=US
Date: 2011.01.19 07:10:39 -05'00'

CHIEF, OCEANOGRAPHIC DIVISION



Preliminary As Final Tidal Zoning for OPR-J417-NRT1-2010, Registry No. H12016_Rev East Bay to Bend Channel, Tampa Bay, FL

| NAME | NO. | DATE | BY | REVISION |
|----------|-----|----------|----|------------------|
| AS BUILT | 001 | 02/10/10 | WJ | ISSUE FOR PERMIT |
| PERMIT | 002 | 03/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 003 | 04/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 004 | 05/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 005 | 06/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 006 | 07/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 007 | 08/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 008 | 09/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 009 | 10/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 010 | 11/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 011 | 12/10/10 | WJ | ISSUE FOR PERMIT |
| REVISION | 012 | 01/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 013 | 02/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 014 | 03/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 015 | 04/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 016 | 05/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 017 | 06/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 018 | 07/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 019 | 08/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 020 | 09/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 021 | 10/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 022 | 11/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 023 | 12/11/11 | WJ | ISSUE FOR PERMIT |
| REVISION | 024 | 01/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 025 | 02/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 026 | 03/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 027 | 04/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 028 | 05/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 029 | 06/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 030 | 07/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 031 | 08/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 032 | 09/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 033 | 10/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 034 | 11/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 035 | 12/12/12 | WJ | ISSUE FOR PERMIT |
| REVISION | 036 | 01/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 037 | 02/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 038 | 03/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 039 | 04/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 040 | 05/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 041 | 06/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 042 | 07/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 043 | 08/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 044 | 09/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 045 | 10/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 046 | 11/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 047 | 12/13/13 | WJ | ISSUE FOR PERMIT |
| REVISION | 048 | 01/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 049 | 02/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 050 | 03/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 051 | 04/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 052 | 05/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 053 | 06/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 054 | 07/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 055 | 08/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 056 | 09/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 057 | 10/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 058 | 11/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 059 | 12/14/14 | WJ | ISSUE FOR PERMIT |
| REVISION | 060 | 01/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 061 | 02/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 062 | 03/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 063 | 04/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 064 | 05/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 065 | 06/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 066 | 07/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 067 | 08/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 068 | 09/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 069 | 10/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 070 | 11/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 071 | 12/15/15 | WJ | ISSUE FOR PERMIT |
| REVISION | 072 | 01/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 073 | 02/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 074 | 03/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 075 | 04/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 076 | 05/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 077 | 06/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 078 | 07/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 079 | 08/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 080 | 09/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 081 | 10/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 082 | 11/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 083 | 12/16/16 | WJ | ISSUE FOR PERMIT |
| REVISION | 084 | 01/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 085 | 02/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 086 | 03/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 087 | 04/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 088 | 05/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 089 | 06/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 090 | 07/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 091 | 08/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 092 | 09/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 093 | 10/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 094 | 11/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 095 | 12/17/17 | WJ | ISSUE FOR PERMIT |
| REVISION | 096 | 01/18/18 | WJ | ISSUE FOR PERMIT |
| REVISION | 097 | 02/18/18 | WJ | ISSUE FOR PERMIT |
| REVISION | 098 | 03/18/18 | WJ | ISSUE FOR PERMIT |
| REVISION | 099 | 04/18/18 | WJ | ISSUE FOR PERMIT |
| REVISION | 100 | 05/18/18 | WJ | ISSUE FOR PERMIT |

NOTE: THIS PLAN IS A PRELIMINARY PLAN AND IS NOT TO BE USED FOR CONSTRUCTION. THE FINAL PLAN WILL BE PROVIDED UPON COMPLETION OF THE PERMITTING PROCESS.

DATE: 05/18/18

PROJECT: OPR-J417-NRT1-2010, Registry No. H12016_Rev

LOCATION: East Bay to Bend Channel, Tampa Bay, FL

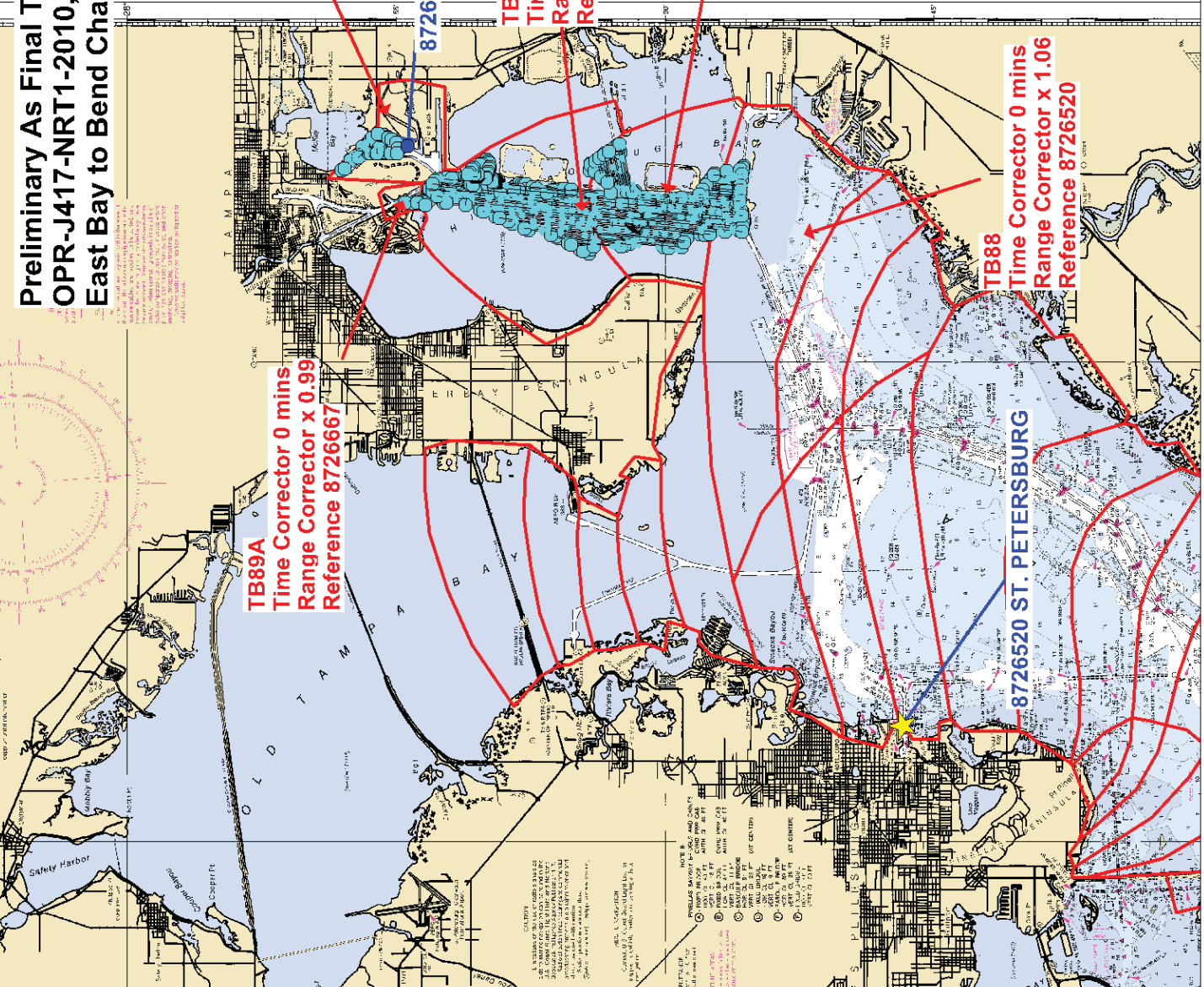
SCALE: AS SHOWN

DESIGNED BY: WJ

CHECKED BY: WJ

APPROVED BY: WJ

DATE: 05/18/18



TB99
Time Corrector +6 mins
Range Corrector x 1.00
Reference 8726667

8726667 MCKAY BAY ENTRANCE

TB89
Time Corrector 0 mins
Range Corrector x 0.97
Reference 8726667

TB88A
Time Corrector -6 mins
Range Corrector x 0.93
Reference 8726667

TB88
Time Corrector 0 mins
Range Corrector x 1.06
Reference 8726520

8726520 ST. PETERSBURG

PHB Compilation Log

General Survey Info

| | | | | | | | |
|----------------|------------------|-------------------------|--------------------------|-------------------|---------|----------|-----|
| Survey Number | H12016 | Field Unit | NRT 1 | State | FL | UTM Zone | 17N |
| Project Number | OPR-J417-NRT1-09 | Project Name (Locality) | Tampa Bay, FL. | | | | |
| Start Date | 08/07/2009 | Sublocality | East Bay to Bend Channel | | | | |
| End Date | 12/09/2010 | Survey Scale | 1:10000 | Compilation Scale | 1:20000 | | |

Affected Raster Charts

| Chart | KAPP | Scale | Edition | Date | NTM Date |
|-------|------|---------|---------|------------|------------|
| 11416 | 2984 | 1:20000 | 10 | 10/01/2008 | 10/08/2011 |
| 11416 | 2983 | 1:40000 | 10 | 10/01/2008 | 10/08/2011 |

Affected Electronic Charts

| ENC | Scale |
|----------|---------|
| US5FL12M | 1:40000 |

Spatial Reference

| | |
|-------------------|-------|
| Horizontal Datum | WGS84 |
| Coordinate System | LLDG |
| Sounding Datum | MLLW |
| Vertical Datum | MHW |

Junction Surveys

| Survey Number | Survey Date | Location Relative to Current Survey |
|---------------|-------------|-------------------------------------|
| H12020 | 2009-2010 | S |

HCell Compiler QC Reviewer SAR Reviewer

Source Surfaces

| Resolution | File Name |
|------------|-------------------------------------|
| 0.50cm | H12016_MBES_50cm_Office_Final.csar0 |
| 5m | H12016_SBES_Base_5m_Final.csar |

PHB Compilation Log

Processing Info

Supporting Documents

| Name | Version |
|--|---|
| Specs and Deliverables | April 2011 |
| HCell Specs | 6.1 |
| <input type="button" value="Add Doc"/> | <input type="button" value="Remove Doc"/> |

Software Used

| Software | Version, HF | Used For |
|-------------------------------|-------------|---|
| CARIS HIPS | 7.0 SP2 HF3 | SAR Review. Inspection of Combined BASE Surfaces. |
| Pydro | 11.8 | SAR Review. Generation of Features Reports. |
| CARIS BASE Editor | 3.2 HF2 | Creation of soundings and bathy-derived features, meta area object, and Blue Notes; Survey evaluation and verification; Initial HCell assembly. |
| CARIS S-57 Composer | 2.2 HF4 | Final compilation of the HCell, correct geometry and build topology, apply final attributes, export the HCell, and QA. |
| CARIS GIS | 4.4a | Setting the sounding rounding variable for conversion of the metric HCell to NOAA charting units with NOAA rounding. (For Fathoms and Feet chart units only.) |
| CARIS HOM | 3.3 SP3 HF8 | Perform conversion of the metric HCell to NOAA charting units with NOAA rounding. (For Fathom and Feet chart units only) |
| CARIS Plot Composer | 5.1 SP 2 | Generate plots of CARIS Session files used for QC. |
| HydroService, dKart Inspector | 5.1 | Validation check of the base cell file. |
| Fugawi View ENC | 1.0.0.3 | Independent inspection of final HCells using COTS viewer. |

Product Info

Deliverables

Chart Scale HCell

Survey Scale HCell

HCell Report for MCD

Feature Listing

Descriptive Report

Survey Outline

Horizontal and Vertical Units

During creation of the HCell all soundings and features are maintained in metric units with as high precision as possible. Depth units for soundings measured with sonar maintain millimeter precision. Depths on rocks above MLLW and heights on islets above MHW are typically measured with range finder, so precision is less.

Depth Units (DUNI)

Height Units (HUNI)

Positional Units (PUNI)

PHB Compilation Log

| Radius Setting | | |
|--|----------------|---------------|
| A survey-scale sounding (SOUNDG) feature object layer was built from the Combined Surface in CARIS BASE Editor. A shoal-biased selection was made at survey scale using a Radius Table file with values shown below. | | |
| Radius (mm) | Min. Depth (m) | Max Depth (m) |
| 3 | -4.7 | 10 |
| 4 | 10 | 20 |
| 4.5 | 20 | 50 |
| 5 | 50 | 500 |

| Contours | | | |
|--|-------------------|---|-------------------------------|
| Depth contours at the intervals on the largest scale chart are included in the SS HCell for MCD raster charting division to use for guidance in creating chart contours. With the exception of the zero contours included in the *_CS file, contours have not been deconflicted against shoreline features, soundings and hydrography. | | | |
| Charted Contours | Metric Equivalent | Metric- NOAA Rounded | Chart Contours - NOAA Rounded |
| 3ft | 0.9144 | 1.143 | 3.75ft |
| 6ft | 1.8288 | 2.0574 | 6.75ft |
| 12ft | 3.6576 | 3.8862 | 12.75 |
| 18ft | 5.4864 | 5.715 | 18.75 |
| 30ft | 9.144 | 9.3726 | 30.75 |
| <input type="button" value="Add Contour"/> | | <input type="button" value="Remove Contour"/> | |

Additional Info

| Contact Information | |
|---|--|
| Inquiries regarding this HCell content or construction should be directed to: | |
| HCell Compiler | <input type="text" value="Fernando Ortiz"/> |
| Phone Number | <input type="text" value="206.526.6859"/> |
| Email | <input type="text" value="fernando.ortiz@noaa.gov"/> |

| Compilation Comments |
|-----------------------------|
| |

APPROVAL SHEET
H12016

The survey evaluation and verification has been conducted according to branch processing procedures and the HCell compiled per the latest OCS HCell Specifications.

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, S-57 classification and attribution of soundings and features, cartographic characterization, and verification or disapproval of charted data within the survey limits. The survey records and digital data comply with OCS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.

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