

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. F00527

LOCALITY

State Georgia

General Locality St. Catherines Sound

Sublocality Approach to St. Catherines Sound

2006

CHIEF OF PARTY

LIBRARY & ARCHIVES

DATE

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

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

F00527

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

FIELD NUMBER: N/A

State/Territory: **Georgia**

General Locality: **St. Catherines Sound**

Sub-Locality: **Approach to St. Catherines Sound**

Scale: **1:10,000** Date of Survey: 14 Sep, 06 to 20 Sep. 06

Instructions Dated: **8 Sep, 2006** Project Number: **OPR-G381-NRT2-05 06**

Vessel: **NOAA Launch 1210**

Chief of Party: **David B. Elliott - Team Leader**

Surveyed by: **David Elliott, Robert Ramsey & Frank Younger (NRT2)**

Soundings by: **ODOM ECHTOTRAC CV**

Graphic record scaled by: **DE, RR, FY**

Graphic record checked by: **DE, RR, FY**

Protracted by: **N/A** Automated Plot: **N/A**

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

Soundings in: **Meters at MLLW**

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

1) All Times are UTC.

2) This is a basic Hydrographic Survey under the Navigable Area Concept.

3) Projection is UTM Zone 17.

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DESCRIPTIVE REPORT

to accompany

OPR-G381

**HYDROGRAPHIC SURVEY
FIELD EXAMINATION
F00527**

Scale of Survey: 1:10,000

Year of Survey: 2006

Navigation Response Team 2 - Launch 1210

David B. Elliott- Team Leader

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Port Letter Instructions for project OPR-G381-NRT-06, Brunswick, Georgia. The instructions are dated Sep 8, 2006.

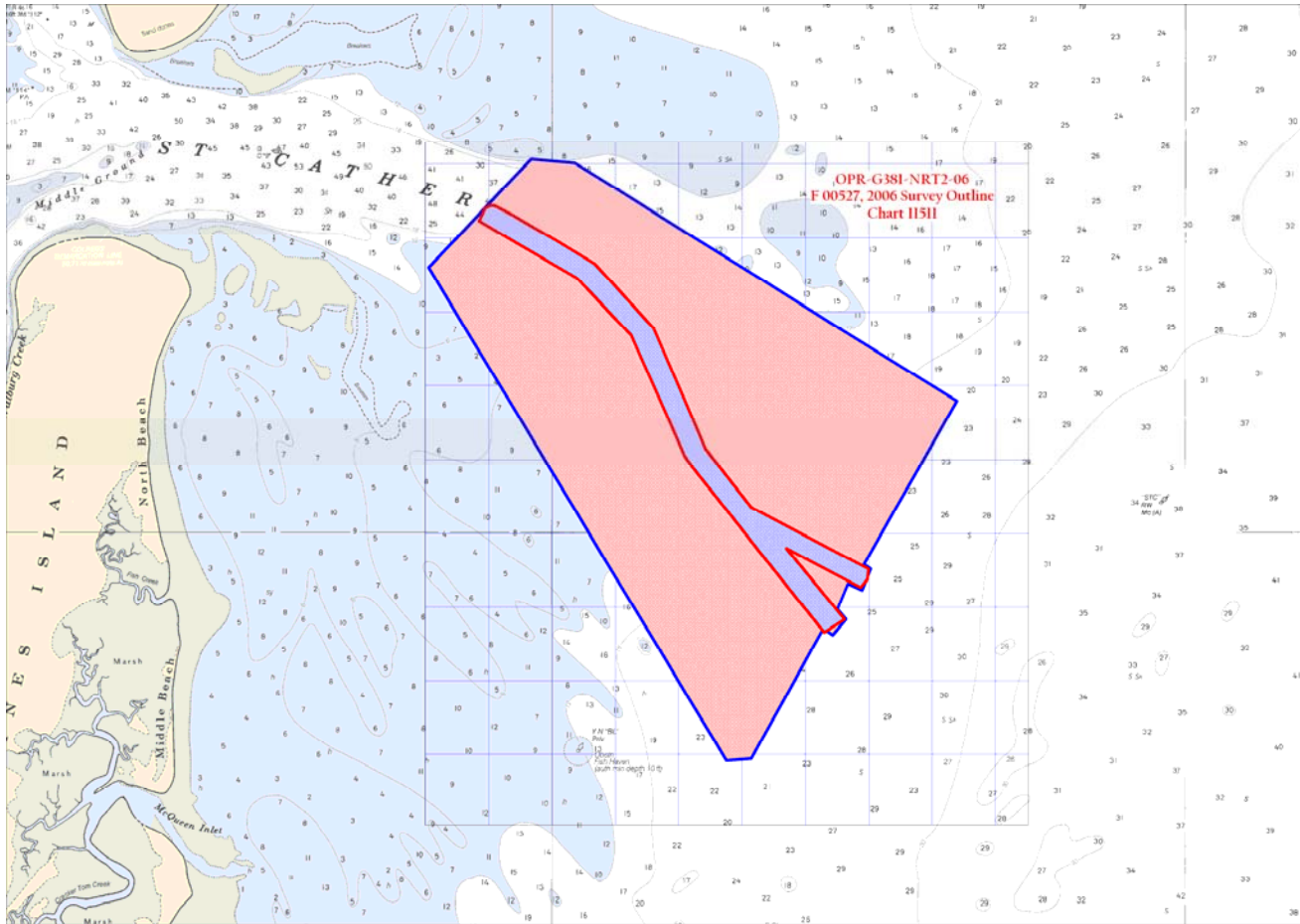
The purpose of this project is to collect new hydrography in the Approach to St. Catherines Sound, GA. The United States Coast Guard made a formal request to the South East Regional Navigation Manager. The USCG required bathymetry from a hydrographic survey to assist in re-aligning the buoys to mark the Entrance Channel to St. Catherines Sound. The results from the contemporary hydrography and investigations will also serve as a chart evaluation for NOS Raster & Electronic Nautical Charts (ENC). The hydrographic data from this project will help ensure navigational safety through updated critical nautical charts and provide new information for emergency response organizations to use in the event of a marine casualty or coastal storm.

Survey Limits for - F00527 are as follows:

31° 42' 39" N
081° 06' 00" W
31° 38' 01" N
081° 01' 14" W

Survey Dates: Sep 14, 2006 (DN: 257) to, Sep 20, 2006 (DN: 263)

Survey limits are displayed graphically in the chartlet on the following page.



Total LNM of SB & SSS = 151 Total Sq NM = 7.4

B. DATA ACQUISITION AND PROCESSING *See also the Evaluation Report.*

B.1. EQUIPMENT

Data were acquired by Navigation Response Team 2 and survey Launch 1210. The vessel was configured as described in the Data Acquisition and Processing Report (DAPR)* for this project. Major data acquisition systems are summarized below.

NOAA launch 1210, a 30-foot SeaArk with a draft of 0.5 meters, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel.

**** Filed digitally at the Atlantic Hydrographic Branch (AHB).***

An ODOM EchotracCV Fathometer *echosounder* was used to collect all echo soundings on this survey

A Klein 3000 side scan sonar was used throughout this survey. The side scan sonar equipment was used to investigate AWOIS items.

A Trimble DGPS Beacon Receiver was used as the primary navigation station on launch 1210.

A Trimble Pathfinder ProXRS was used for all ENC high accuracy positioning and establishment of calibration points.

The following instruments were used for determining corrections for the speed of sound through the water column, an Odom Digi-Bar Pro, & Seabird-Seacat Model 19-03 Velocity Profiler.

B.2. QUALITY CONTROL

Following the Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables Manual, June 14 2005 has insured the integrity of the survey data for F00527.

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. DGPS performance checks were conducted in accordance with FPM 3.4.4 by comparing the DGPS position of the vessel to a high accuracy (1st order) calibration point weekly.

Echo Sounder Control

Lead line comparisons were conducted daily and compared to the digital depth and draft.

Side Scan Sonar Quality Control

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 daily at 100/500kHz.

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 and single beam reduced line spacing was performed in other areas where warranted. The towfish was deployed off the starboard quarter of the vessel, which proved very stable. Distorted images caused by strong tidal currents, or sea state, were seen periodically. Significant contacts and shadows were processed with Caris HIPS/SIPS to determine the height off the bottom. The significant contacts were then compared by position, as well as common depth and relationship to channels to determine if further investigations were needed. All areas surveyed were track line/swath line plotted to insure complete coverage.

The system frequencies used were 100kHz and 500kHz. The recorder was set on one of either 50/75/100-meter range scales. There were no water depths greater than 35 meters.

When operating in shoaler waters (e.g. less than 30 meters deep), a short tow was required for the Klein system. When cable-out was approximately 7 meters or less, minor degradation of the side scan imagery and Odom CV echosounder traces were noted due to cross-talk between the two systems.

Junctions (*with Prior Survey*)

This survey overlaps the survey H09462 (1974, 1:20,000) and has junction soundings relating to each quadrant. Survey depths do not compare well within most regions. Current survey depths show variances from three to twenty- feet between surveys.

B.3. CORRECTIONS TO ECHO SOUNDING

A table detailing all sound velocity casts is contained in Separates II - Sound Speed Data.* Sound velocity data has been submitted with the digital data package, as per FPM 2.1, section 5.1.2.2. The cast data table is organized on the digital media as follows: vessel / day of cast / cast data.

There are no deviations to be discussed in this section.

C. VERTICAL AND HORIZONTAL CONTROL

The following instruments were used for determining corrections for the speed of sound through the water column, an Odom Digi-Bar Pro, & Seabird-Seacat Model 19-03 Velocity Profiler. Data quality assurance tests were performed after each cast. Program VELOCWIN was used for computing the correctors. Corrections were applied to the sounding plot using the Caris HIPS.

Field soundings are corrected by unverified actual heights from NOAA/CO-OPS. ***Preliminary tide heights and zoning were accepted as final. See final Tide Note.***

The Real Time Actual 6 min Tides are downloaded from: "http://co-ops.nos.noaa.gov/data_res.html", for all gauges required in the given projects defined by the ZDF file provided in the project letter, and instruction. Tide values are downloaded in blocks of data that covers the Times of Hydrography, and saved in a text file format. The MapInfo program is then used with the "HYDRO_MI" pre-Survey function, of "Create Cowlis", this function converts the text file into a Caris tide file (.tid).

All elevations and soundings on survey F00527 are based on MLLW unless otherwise specified.

A Request for Approved Tides letter was sent to N/OPS1 on Oct 24, 2006 (Appendix IV).

* ***Filed digitally at AHB.***

Horizontal Control

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 17. The control reference station used for this survey was the USCG DGPS Beacon *in Savannah, GA.*

Horizontal dilution of precision (HDOP) was monitored on Hypack daily on the survey platform. Any HDOP values exceeding 2.5 were addressed; and adequate satellite coverage was maintained throughout the survey period. All positioning equipment was operated in a manner consistent with the manufacturer's requirements and as described in the DAPR.* There were no equipment malfunctions which affected the positional quality of the data.

* *Filed digitally at AHB.*

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

D.1 Chart Comparison

There are two charts affected by this survey:

<u>Chart Number</u>	<u>Edition</u>	<u>Edition Date</u>	<u>Scale</u>
11509	29 th	Aug. 01, 2005	1:80,000
11511	17th	Jun. 01, 2004	1:40,000

General Agreement with Charted soundings

In general survey soundings do not compare with the charted soundings. There are major discrepancies within the survey area and regions of shoaling that have changed dramatically. All charted soundings should be superseded by this survey. *Concur.*

The following is a list of comparisons between the survey data and charted shoals or potentially hazardous features as well as notable sounding discrepancies on the chart:

- 1) There is a baring shoal @ MLLW located at 31° 41' 05" N, 081° 05' 07.3" W. *Concur.*
- 2) There is a baring shoal @ MLLW located at 31° 41' 31.2" N, 081° 05' 20.1" W. *Concur.*
- 3) There is shoal migration into deep water at 31° 42' 28.7" N, 081° 04' 55.8" W. There are 2 foot soundings seaward of the 12 foot contour and 6 foot soundings seaward of the 18 foot contour. *Concur.*
- 4) There is a five-foot shoal/bar @ MLLW located at 31° 40' 22.4" N, 081° 03' 17.9" W that extends into the currently marked channel. This shoal area lies in a region currently charted at 15 feet. *Concur.*

Note: Most of the shoal developments are lying in a northwest southeast axis.

The following is a list of comparisons with controlling depths, tabulated depths and reported depths of maintained channels:

None *Concur.*

AWOIS Item Investigations

There were no AWOIS items assigned within the survey limits. *Concur.*

The following is a list of charted features that were investigated on F00527 that contain the label PA, ED, PD or Rep that were not assigned as AWOIS:

None *Concur.*

Dangers to Navigation

There were no DTONS reported within the confines of F00527. *Do Not Concur. Five Dtons were found by office personnel. See Appendix I for more information.*

D. 2. ADDITIONAL RESULTS

Aids to Navigation and Other Detached Positions

Navigation Aids currently serve their intended purpose, with the exception of two buoys, FL R "2" & GC "3". The USCG will be using the contemporary bathymetry from F00527 to re-align the channel. The USCG has been provided advanced survey information "Subject to Office Review" for the purpose of moving aids to navigation to improve the channel entrance. Charted positions will be superseded by new survey positions with a post survey of ATON's after the USCG completes the necessary adjustments to the navigational aids. *Defer to the Marine Chart Division (MCD) for final disposition of ATONs.*

Ferry Routes

There are no Ferry routes within the confines of F00527. *Concur.*

Submarine Cables and Pipelines

There are no cables and pipelines within the survey limits of F00527. *Concur.*

Bridges

There are no bridges within the survey limits of F00527. *Concur.*

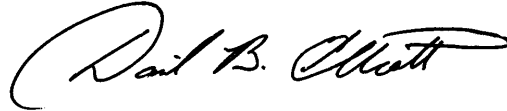
E. APPROVAL SHEET

OPR-G381-NRB
St. Catherines Sound
GA
Survey Registry No. F00527

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

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

Submitted by:



David B. Elliott - Team Leader
Navigation Response Team 2

Dangers to Navigation from survey F00527

Registry Number: F00527
State: Georgia
Locality: Atlantic Ocean
Sub-locality: St. Catherines Sound
Project Number: OPR-G381-NRT2-06
Survey Dates: 09/18/2006 - 09/20/2006

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11511	17th	06/01/2004	1:40,000 (11511_1)	USCG LNM: 01/23/2007 (09/11/2007) NGA NTM: None (09/15/2007)
11509	29th	08/01/2005	1:80,000 (11509_1)	[L]NTM: ?
11480	39th	09/01/2005	1:449,659 (11480_1)	[L]NTM: ?
11009	37th	07/01/2004	1:1,200,000 (11009_1)	[L]NTM: ?
411	50th	09/01/2005	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	584/1	Sounding	1.65 m	31° 40' 23.8" N	081° 03' 16.6" W	---
1.2	11/1	Sounding	0.95 m	31° 40' 58.8" N	081° 05' 06.9" W	---
1.3	135/1	Sounding	0.92 m	31° 41' 31.1" N	081° 05' 13.1" W	---
1.4	21/1	Sounding	0.79 m	31° 41' 34.4" N	081° 05' 27.1" W	---
1.5	126/1	Sounding	0.72 m	31° 42' 29.1" N	081° 04' 58.2" W	---

1 - Danger To Navigation

1.1) Profile/Beam - 584/1 from f00527 / nrt2_1210_sb / 2006-261 / 009_1324**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 40' 23.8" N, 081° 03' 16.6" W
Least Depth: 1.65 m (= 5.40 ft = 0.899 fm = 0 fm 5.40 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.000 m ; **TVU (TPEv)** ± 1.000 m
Timestamp: 2006-261.13:25:13.214 (09/18/2006)
Survey Line: f00527 / nrt2_1210_sb / 2006-261 / 009_1324
Profile/Beam: 584/1
Charts Affected: 11511_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00527/nrt2_1210_sb/2006-261/009_1324	584/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

5ft (11511_1, 11509_1)

0 $\frac{3}{4}$ fm (11480_1, 11009_1, 411_1)**S-57 Data**

Geo object 1: Sounding (SOUNDG)
Attributes: QUASOU - 1:depth known
 SORDAT - 20060920
 SORIND - US,US,nsurf,F00527
 TECSOU - 1:found by echo-sounder
 VERDAT - 12:Mean lower low water

Office Notes

This sounding is between a charted 16ft depth and a charted 12ft depth, and the shoal that it is part of is extending into the channel (as it was in 2006). Chart a 5ft sounding.

1.2) Profile/Beam - 11/1 from f00527 / nrt2_1210_sb / 2006-261 / 097_1442**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 40' 58.8" N, 081° 05' 06.9" W
Least Depth: 0.95 m (= 3.11 ft = 0.518 fm = 0 fm 3.11 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.000 m ; **TVU (TPEv)** ± 1.000 m
Timestamp: 2006-261.14:42:36.259 (09/18/2006)
Survey Line: f00527 / nrt2_1210_sb / 2006-261 / 097_1442
Profile/Beam: 11/1
Charts Affected: 11511_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00527/nrt2_1210_sb/2006-261/097_1442	11/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

3ft (11511_1, 11509_1)

0 ½fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: QUASOU - 1:depth known
 SORDAT - 20060920
 SORIND - US,US,nsurf,F00527
 TECSOU - 1:found by echo-sounder
 VERDAT - 12:Mean lower low water

Office Notes

This sounding is approximately 160m south of a shoal that bares at MLLW. Chart a 3ft sounding.

1.3) Profile/Beam - 135/1 from f00527 / nrt2_1210_sb / 2006-262 / 117_1308**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 41' 31.1" N, 081° 05' 13.1" W
Least Depth: 0.92 m (= 3.02 ft = 0.503 fm = 0 fm 3.02 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.000 m ; **TVU (TPEv)** ± 1.000 m
Timestamp: 2006-262.13:08:13.479 (09/19/2006)
Survey Line: f00527 / nrt2_1210_sb / 2006-262 / 117_1308
Profile/Beam: 135/1
Charts Affected: 11511_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00527/nrt2_1210_sb/2006-262/117_1308	135/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

3ft (11511_1, 11509_1)

0 ½fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: QUASOU - 1:depth known
 SORDAT - 20060920
 SORIND - US,US,nsurf,F00527
 TECSOU - 1:found by echo-sounder
 VERDAT - 12:Mean lower low water

Office Notes

This sounding is approximately 210m east of a shoal that bares at MLLW. Chart a 3ft sounding.

1.4) Profile/Beam - 21/1 from f00527 / nrt2_1210_sb / 2006-262 / 119_1420**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 41' 34.4" N, 081° 05' 27.1" W
Least Depth: 0.79 m (= 2.60 ft = 0.433 fm = 0 fm 2.60 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.000 m ; **TVU (TPEv)** ± 1.000 m
Timestamp: 2006-262.14:20:02.288 (09/19/2006)
Survey Line: f00527 / nrt2_1210_sb / 2006-262 / 119_1420
Profile/Beam: 21/1
Charts Affected: 11511_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00527/nrt2_1210_sb/2006-262/119_1420	21/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

2ft (11511_1, 11509_1)

0 ¼fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: QUASOU - 1:depth known
 SORDAT - 20060920
 SORIND - US,US,nsurf,F00527
 TECSOU - 1:found by echo-sounder
 VERDAT - 12:Mean lower low water

Office Notes

This sounding is approximately 200m NW of a shoal that bares at MLLW. Chart a 2ft sounding.

1.5) Profile/Beam - 126/1 from f00527 / nrt2_1210_sb / 2006-263 / 077_1429**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 31° 42' 29.1" N, 081° 04' 58.2" W
Least Depth: 0.72 m (= 2.35 ft = 0.392 fm = 0 fm 2.35 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.000 m ; **TVU (TPEv)** ± 1.000 m
Timestamp: 2006-263.14:29:57.356 (09/20/2006)
Survey Line: f00527 / nrt2_1210_sb / 2006-263 / 077_1429
Profile/Beam: 126/1
Charts Affected: 11511_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00527/nrt2_1210_sb/2006-263/077_1429	126/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

2ft (11511_1, 11509_1)

0 ¼fm (11480_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: QUASOU - 1:depth known
 SORDAT - 20060920
 SORIND - US,US,nsurf,F00527
 TECSOU - 1:found by echo-sounder
 VERDAT - 12:Mean lower low water

Office Notes

This sounding is the shoalest sounding in survey F00527, and is close to being on the seaward side of the 18ft curve. Chart a 2ft sounding.

F00527_Features_Report

Registry Number: F00527
State: Georgia
Locality: Atlantic Ocean
Sub-locality: St. Catherines Sound
Project Number: OPR-G381-NRT2-06
Survey Date: 09/20/2006

As per 5.1.2.2 "Field Procedures Manual Version 2.1", pg.175

Charts Affected

Number	Version	Date	Scale
11511	17th Ed.	06/01/2004	1:40000
11509	29th Ed.	08/01/2005	1:80000
11480	39th Ed.	09/01/2005	1:449659
11009	37th Ed.	07/01/2004	1:1200000
411	50th Ed.	09/01/2005	1:2160000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	GC 3 USCG LL#5800	Sounding	[None]	31.67479572° N	081.06032750° W	---
1.2	Lt buoy R 2 USCG LL#5795	Sounding	[None]	31.67535717° N	081.05938275° W	---
1.3	GC 5 USCG LL#5805	Sounding	[None]	31.68718008° N	081.07171136° W	---
1.4	Lt buoy G 7 USCG LL#5810	Sounding	[None]	31.70101211° N	081.08769628° W	---

1 - New Features

1.1) Profile/Beam - 1/1 from f00527 / nrt2_1210_dpnonechosounder / 2006-263 / current nav aids 09202006

Survey Summary

Survey Position: 31.67479572° N, 081.06032750° W
Least Depth: [None]
Timestamp: 2006-263.16:33:39.000 (09/20/2006)
DP Dataset: f00527 / nrt2_1210_dpnonechosounder / 2006-263 / current nav aids 09202006
Profile/Beam: 1/1
Charts Affected: 11511_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

USCG ATON plans to adjust all aids to re-align for new channel, based on survey data provided.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00527/nrt2_1210_dpnonechosounder/2006-263/current nav aids 09202006	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Buoy, lateral (BOYLAT)
Attributes: BOYSHP - 2:can (cylindrical)
 CATLAM - 1:port-hand lateral mark
 COLOUR - 4:green
 CONRAD - 2:not radar conspicuous
 OBJNAM - GC 3 USCG LL#5800

Feature Images

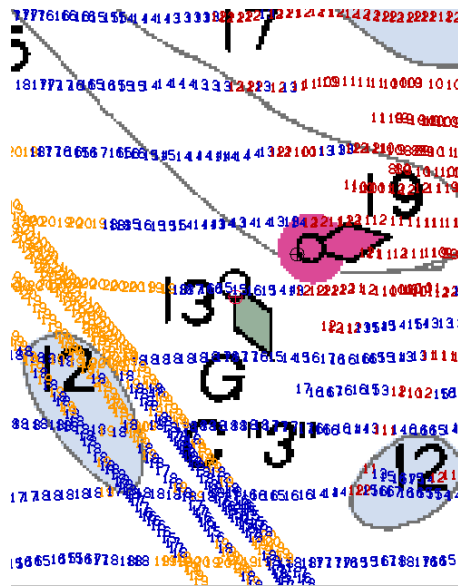


Figure 1.1.1

1.2) Profile/Beam - 2/1 from f00527 / nrt2_1210_dpnonechosounder / 2006-263 / current nav aids 09202006

Survey Summary

Survey Position: 31.67535717° N, 081.05938275° W
Least Depth: [None]
Timestamp: 2006-263.16:35:12.000 (09/20/2006)
DP Dataset: f00527 / nrt2_1210_dpnonechosounder / 2006-263 / current nav aids 09202006
Profile/Beam: 2/1
Charts Affected: 11511_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

USCG ATON plans to adjust all aids to re-align for new channel, based on survey data provided.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00527/nrt2_1210_dpnonechosounder/2006-263/current nav aids 09202006	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Buoy, lateral (BOYLAT)
Attributes: BOYSHP - 4:pillar
 CATLAM - 2:starboard-hand lateral mark
 COLOUR - 3:red
 CONRAD - 1:radar conspicuous
 OBJNAM - Lt buoy R 2 USCG LL#5795
Geo object 2: Light (LIGHTS)
Attributes: CATLIT - 19:horizontally disposed
 COLOUR - 3:red
 OBJNAM - Lt buoy R 2 USCG LL#5795

Feature Images

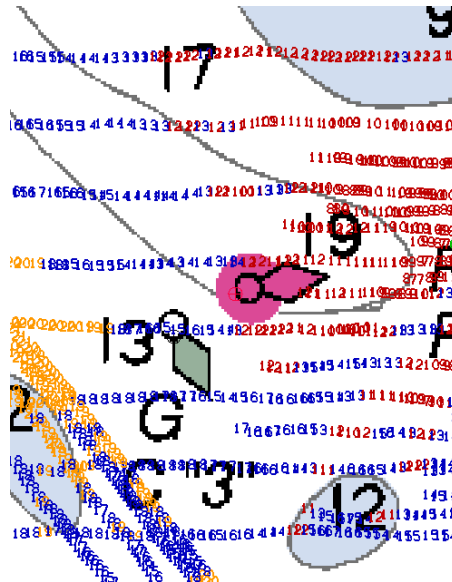


Figure 1.2.1

1.3) Profile/Beam - 3/1 from f00527 / nrt2_1210_dpnonechosounder / 2006-263 / current nav aids 09202006

Survey Summary

Survey Position: 31.68718008° N, 081.07171136° W
Least Depth: [None]
Timestamp: 2006-263.16:39:26.000 (09/20/2006)
DP Dataset: f00527 / nrt2_1210_dpnonechosounder / 2006-263 / current nav aids 09202006
Profile/Beam: 3/1
Charts Affected: 11511_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

USCG ATON plans to adjust all aids to re-align for new channel, based on survey data provided.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00527/nrt2_1210_dpnonechosounder/2006-263/current nav aids 09202006	3/1	0.00	000.0	Primary

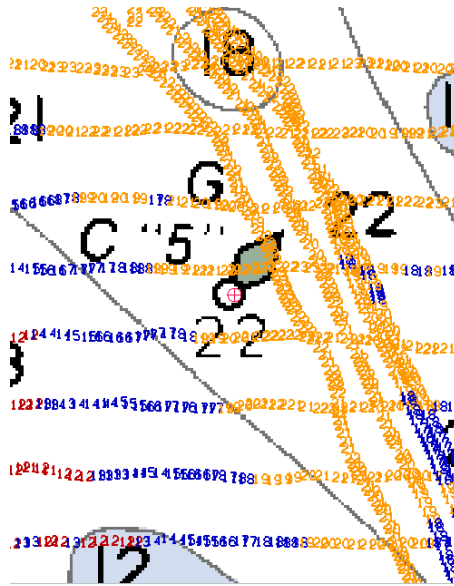
Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Buoy, lateral (BOYLAT)
Attributes: BOYSHP - 2:can (cylindrical)
 CATLAM - 1:port-hand lateral mark
 COLOUR - 4:green
 CONRAD - 2:not radar conspicuous
 OBJNAM - GC 5 USCG LL#5805

Feature Images



1.4) Profile/Beam - 4/1 from f00527 / nrt2_1210_dpnonechosounder / 2006-263 / current nav aids 09202006

Survey Summary

Survey Position: 31.70101211° N, 081.08769628° W
Least Depth: [None]
Timestamp: 2006-263.16:43:43.000 (09/20/2006)
DP Dataset: f00527 / nrt2_1210_dpnonechosounder / 2006-263 / current nav aids 09202006
Profile/Beam: 4/1
Charts Affected: 11511_1, 11509_1, 11480_1, 11009_1, 411_1

Remarks:

USCG ATON plans to adjust all aids to re-align for new channel, based on survey data provided.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00527/nrt2_1210_dpnonechosounder/2006-263/current nav aids 09202006	4/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Buoy, lateral (BOYLAT)
Attributes: BOYSHP - 4:pillar
 CATLAM - 1:port-hand lateral mark
 COLOUR - 4:green
 CONRAD - 1:radar conspicuous
 OBJNAM - Lt buoy G 7 USCG LL#5810
Geo object 2: Light (LIGHTS)
Attributes: CATLIT - 19:horizontally disposed
 COLOUR - 4:green
 OBJNAM - Lt buoy G 7 USCG LL#5810

Feature Images

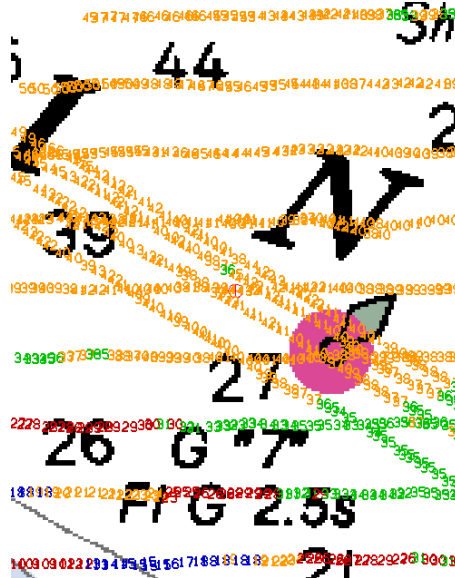


Figure 1.4.1

October 24, 2006

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

FROM: D.B. Elliott, NOAA NRT2

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 the following:

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.: OPR-G381-NRT2-06
Registry No.: F00527
State: Georgia
Locality: Atlantic Ocean
Sublocality: St. Catherines Sound

Attachments containing:

- 1) an Abstract of Times of Hydrography,
- 2) digital MID MIF files of the track lines from Pydro

cc: N/CS33

Year_DOY	Min Time	Max Time
2006_257	13:33:21	17:47:11
2006_258	13:26:35	17:11:22
2006_261	13:03:12	17:47:46
2006_262	13:08:06	18:46:30
2006_263	13:42:41	16:43:43



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : November 1, 2006

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-G381-NRT2-2006
HYDROGRAPHIC SHEET: F00527

LOCALITY: St. Catherine's Sound, Atlantic City, GA
TIME PERIOD: September 14 - September 20, 2006

TIDE STATION USED: 867-0870 Fort Pulaski, GA
Lat. 32° 02.2'N Long. 80° 54.1' W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.173 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project OPR-G381-NRT2-2006, F00527, during the time period between September 14 to September 20, 2006.

Please use the zoning file "G381NRT22006CORP" submitted with the project instructions for OPR-G381-NRT2-2006. Zones SA174, SA175, SA176 and SA177 are the applicable zones for F00527.

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).

Fa [Signature]

CHIEF, PRODUCT AND SERVICES DIVISION



Subject: F00527 DtonNs

Date: Wed, 08 Oct 2008 11:12:30 -0400

From: Marilyn L Schluter <Marilyn.L.Schluter@noaa.gov>

To: mcd.dton@noaa.gov

CC: Castle E Parker <Castle.E.Parker@noaa.gov>, Shep Smith <Shep.Smith@noaa.gov>

Good Day: Please find attached zip file concerning survey F00527 Danger

to Navigation submission #1 to the Marine Chart Division (MCD). The information submitted by AHB has been verified; the survey is in the branch processing phase at this time. The submitted DTON file contains five items.

The contents of the attached WinZip file were generated at the Atlantic Hydrographic Branch and contain item investigation forms in .pdf format.

An .xml file is also attached. The largest scale charts affected by this Dton are 11511 and 11509.

If you have any questions, please direct them to Chief, AHB, or myself via email at the address above or call 757-441-6862.

Thank you for your assistance with this matter. Marilyn Schluter

Name: Dangers to Navigation.xml

Dangers to Navigation.xml Type: XML Document (text/xml)

Encoding: quoted-printable

Name: Dangers to Navigation.zip

Type: Zip Compressed Data

Dangers to Navigation.zip (application/x-zip-compressed)

Encoding: base64

Download Status: Not downloaded with message

Subject: Danger to Navigation

Date: Thu, 09 Oct 2008 10:39:16 -0400

From: Kate Fensterstock <Katherine.Fensterstock@noaa.gov>

To: Castle.E.Parker@noaa.gov, Dave Neander <Dave.Neander@noaa.gov>, Ed Martin <Ed.Martin@noaa.gov>, Howard Danley <Howard.Danley@noaa.gov>, Joseph Robinson <Joseph.Robinson@noaa.gov>, Kevin.Shaw@noaa.gov, Mark Griffin <Mark.Griffin@noaa.gov>, "Richard.Sillcox" <Richard.Sillcox@noaa.gov>, Shep Smith <Shep.Smith@noaa.gov>, Stephen.Hill@noaa.gov, Thomas Loeper <Thomas.Loeper@noaa.gov>, "Ken.Forster" <Ken.Forster@noaa.gov>, "Chris.Libeau" <Chris.Libeau@noaa.gov>, James.M.Crocker@noaa.gov, Travis Newman <Travis.Newman@noaa.gov>

L-1094/08 and DD-12356 have been registered by the Nautical Data Branch and directed to Products Branch E for processing.

The DtonNs reported are soundings in St. Catherine Sound, GA.

The following charts are affected:

11511 kapp 243

11509 kapp 254

The following ENC cell is affected:

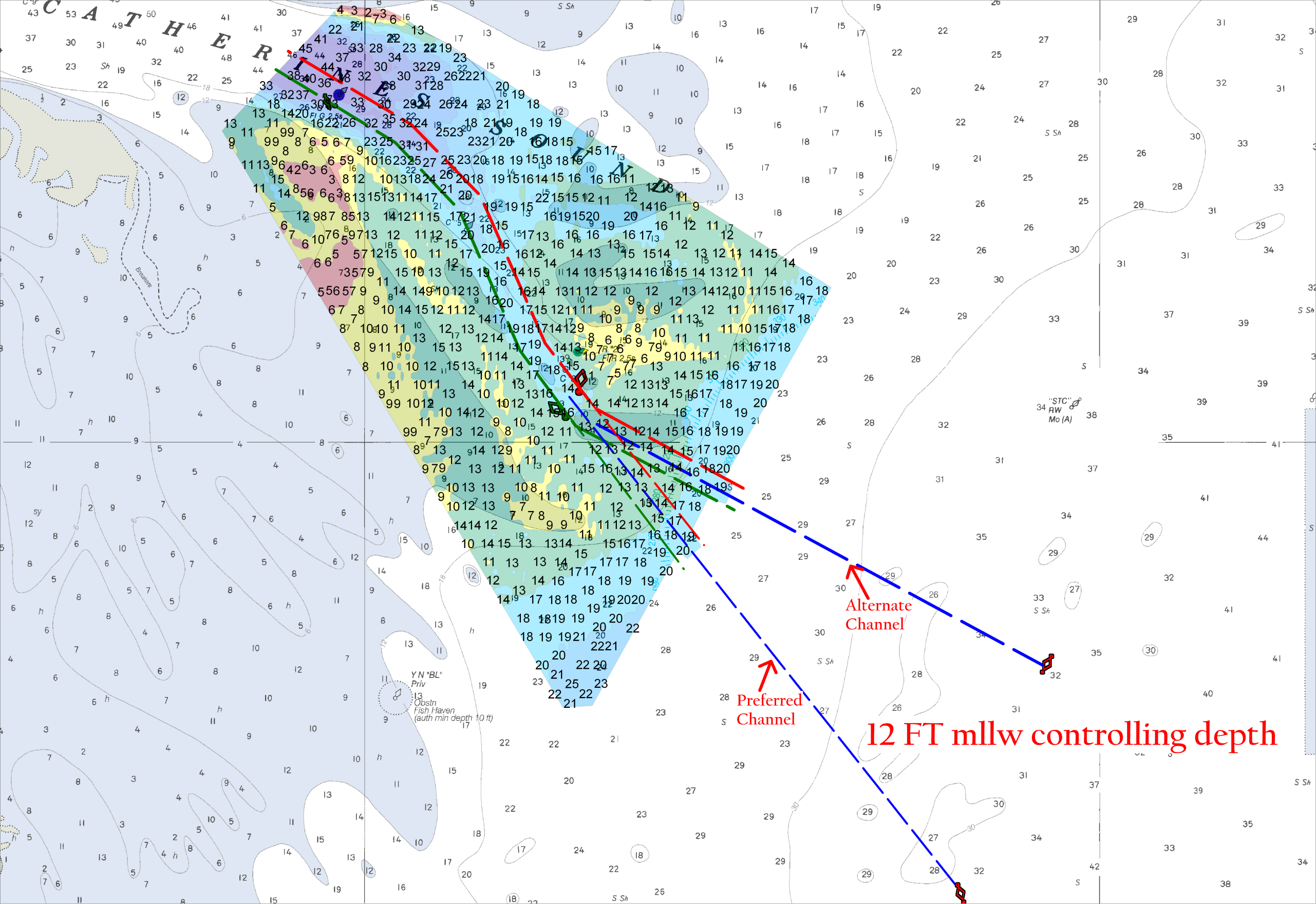
US4GA17M

References:

F-00527

OPR-G381-NRT2-06

This information was discovered and submitted by NRT -2.



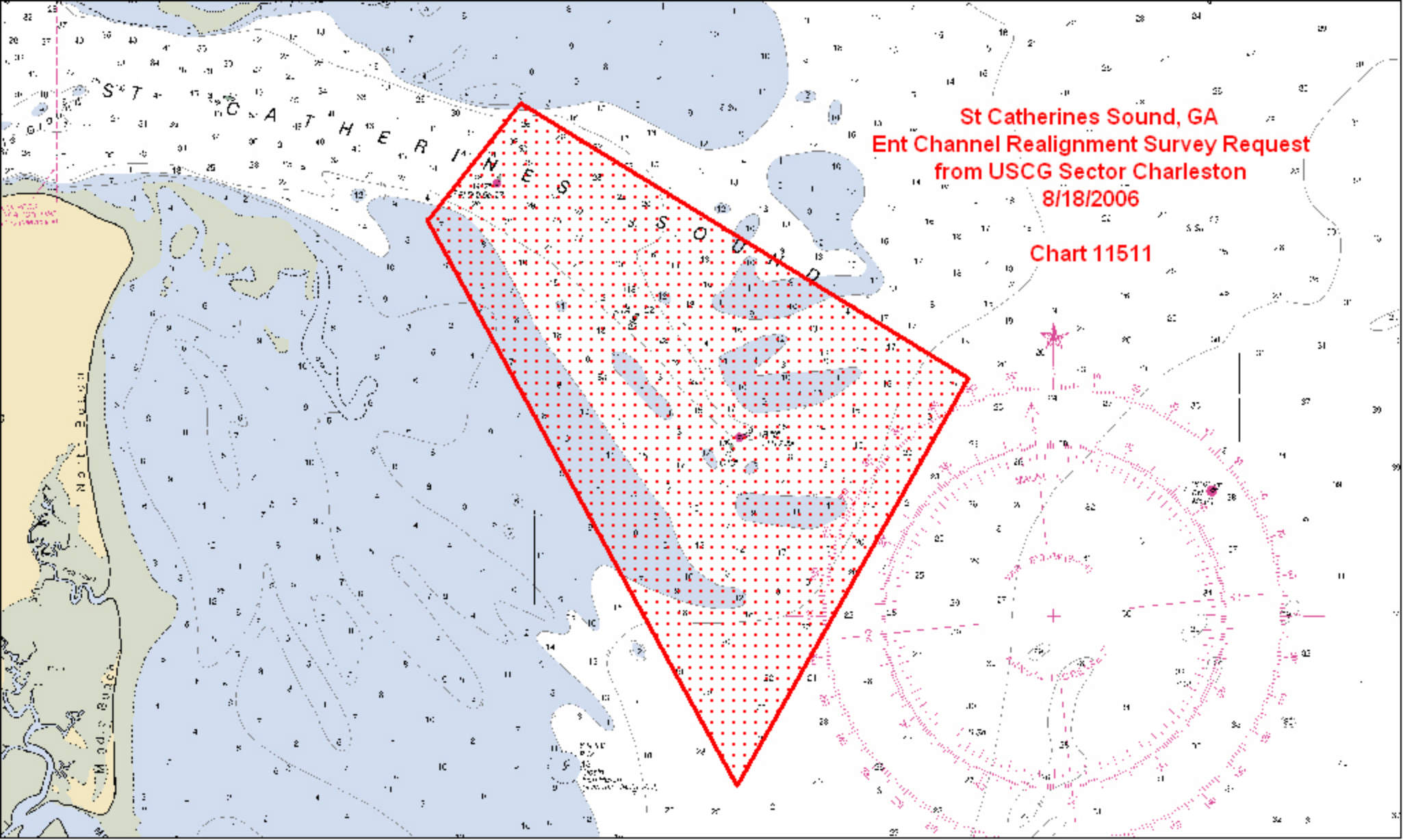
Alternate Channel

Preferred Channel

12 FT mllw controlling depth

St Catherines Sound, GA
Ent Channel Realignment Survey Request
from USCG Sector Charleston
8/18/2006

Chart 11511



**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to ACCOMPANY
SURVEY F00527 (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.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

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

HSTP PYDRO version 8.7 r2519
CARIS HIPS/SIPS version 6.1 SP2 HF 1
CARIS Bathy Manager version 2.1 SP1 HF 1-9
DKART INSPECTOR, version 5.0 Build 732 SP1
CARIS HOM version 3.3 SP3 HF 1-8
CARIS S-57 Composer version 2.0 HF 1

B.2. QUALITY CONTROL

B.2.1. H-Cell

The AHB source depth grid for the survey's nautical chart update product used one finalized two meter resolution surface grid created at AHB. The survey scale selected soundings were extracted from the 2m surface. The selected sounding set is approximately 40 times the number of charted depths. The chart scale selected soundings are a subset of the survey scale selected soundings. The surface model was referenced when selecting the chart scale soundings, to ensure that the selected soundings portrayed the bathymetry within the common area.

The 6, 12, 18, and 30 foot depth curves were created from the 2m surface grid. They were created with the BathyDataBase Manager program and are for reference only. All redundant vertices found in the dKart test were on these depth curves.

The pre-compilation products or components (Stand Alone HOB files (SAHOB)) are detailed in the Pre-Compile Process Log attached at the end of this document. The SAHOB files include sounding selections (SOUNDG), features (SBDARE), Meta objects (M_COVR, M_QUAL), and cartographic Blue Notes. 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_CS.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 F00527 CARIS H-Cell final deliverables include the following products:

US500527_CS.000	1:40,000 Scale	F00527 H-Cell with Chart Scale Selected Soundings
US500527_SS.000	1:10,000 Scale	F00527 Selected Soundings (Survey Scale)

B.2.4 Junctions

Survey F00527 (2006) does not junction with any contemporary surveys. See also the Descriptive Report.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

11511 (17th Edition,Jun/04)

Corrected through NM Jun 19, 2004
Corrected through LNM Jun 01, 2004
Scale 1:40,000

11509 (30th Edition,Dec/06)

Corrected through NM Dec 09, 2006
Corrected through LNM Dec 05, 2006
Scale 1:80,000

ENC Comparison

US4GA17M

Tybee Island to Doboy Sound
Edition 1
Application Date 2006-11-02
Issue Date 2007-09-28
Chart 11509

D.1 Hydrography

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section "D" and Appendix 2 of the Descriptive Report (DR), with exception of features noted in the following sections.

Four uncharted shoal areas were found during the course of the survey. Two of them are shoals that bare at MLLW. These two shoals were not delineated in any way by the field party, so their size and shape were guessed at in the office, and they were included in the H-cell as Intertidal Areas. See page 6 of the Descriptive Report for more information on all four of the shoals. Defer final disposition to the Marine Chart Division (MCD), which may have access to imagery of the area.

D.2

There are four Aids to Navigation (buoys) within the survey limits of survey F00527. See the page 7 of the Descriptive Report for further information.

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:

ADEQUACY OF SURVEY

The present survey is adequate to supersede the charted bathymetry 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.

This Document is for Office Process use only and is intended to supplement, not supersede or replace, information/recommendations in the Descriptive or Evaluation Reports

- b. Output Options:
 - i. Create contour lines:
 - 1. Line Object: DEPCNT
 - 2. Value Attribute: VALDCO

- V. SOUNDING SELECTION:
 - a. Selection Criteria:
 - i. Radius
 - ii. Shoal biased
 - iii. Use Single-Defined Radius: 375 distance on ground (m)
 - iv. Filter: _____

- VI. FEATURES:
 - a. Brought in from Survey
 - Total No. 4 Buoys
 - b. Brought in from Raster
 - Raster: # 11511
 - Total No. 4 Bottom Samples

- VII. META-OBJECTS:
 - a. M_COVR attributes

Acronym	Value
SORDAT	20060920
CATCOV	1 (coverage available)
SORIND	US,US,survey,F00527

- b. M_QUAL attributes

Acronym	Value
CATZOC	Unassessed
INFORM	F00527,OPR-G381-NRT2-06,NRT2
POSACC	10m
SORDAT	20060920
SORIND	US,US,survey,F00527
SUREND	20060920
SURSTA	20060914
TECSOU	1 (single beam echo-sounder)

- c. DEPARE attributes

Acronym	Value
DRVALV 1	0.454m
DRVALV2	15.650m
SORDAT	20060920
SORIND	US,US,nsurf,F00527

- d. M_CSCL attributes

Acronym	Value
CSCALE	
SORDAT	
SORIND	

- VIII. NOTES: **There are actually 3 DEPAREs on this survey. One covers the whole survey (see above) and the other two are just for the two inter-tidal areas, which are explained in the DR and ER.**

APPROVAL SHEET
F00527

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, 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 a comprehensive reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

Marilyn L. Schlüter
Cartographer
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 M. Smith
Commander, NOAA
Chief, Atlantic Hydrographic Branch