

F00562

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey MULTIBEAM

Field No S-M917-NRT6-08

Registry No. F00562

LOCALITY

State CALIFORNIA

General Locality CRESCENT CITY

Locality CRESCENT CITY HARBOR

2008

CHIEF OF PARTY
ERIC M. MOORE

LIBRARY & ARCHIVES

DATE FEBRUARY, 2008

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

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET**F00562**

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: **California**

General Locality: **Crescent City**

Sub-Locality: **Crescent City Harbor**

Scale: **1:5,000** Date of Survey: **11/18/08 to 11/23/08**

Instructions Dated: **11/12/2008** Project Number: **S-M917-NRT6-08**

Vessel: **NOAA survey boat S3003**

Chief of Party: **Eric Moore**

Surveyed by: **NRT-6**

Soundings by: **Simrad EM3000 multibeam sonar, Klein 3000 side scan sonar**

Graphic record checked by: **N/A**

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

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

Soundings in: **Meters at MLLW**

Remarks: ***Bold, Italic, Red notes in the Descriptive Report were made during office processing.******1) All Times are UTC.******2) This is a Standard Navigable Area Hydrographic Survey.******3) Projection is UTM Zone 10.***

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**Data Filed with original field records*

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SURVEY F00562

PROJECT: S-M917-NRT6-08

Scale of Survey: 1:5000

Year of Survey: 2008

NOAA Navigation Response Team 6

Eric Moore, Laura Pagano and Ed Wernicke

A. AREA SURVEYED

This survey was conducted in accordance with Hydrographic Survey Letter Instructions* for Survey F00562, Crescent City, CA. The original instructions are dated November 12, 2008. Data acquisition was conducted from November 18 through November 23, 2008.

See Figures 1-3 on the following page for images of survey limits and data coverage.

**Filed with original field records.*

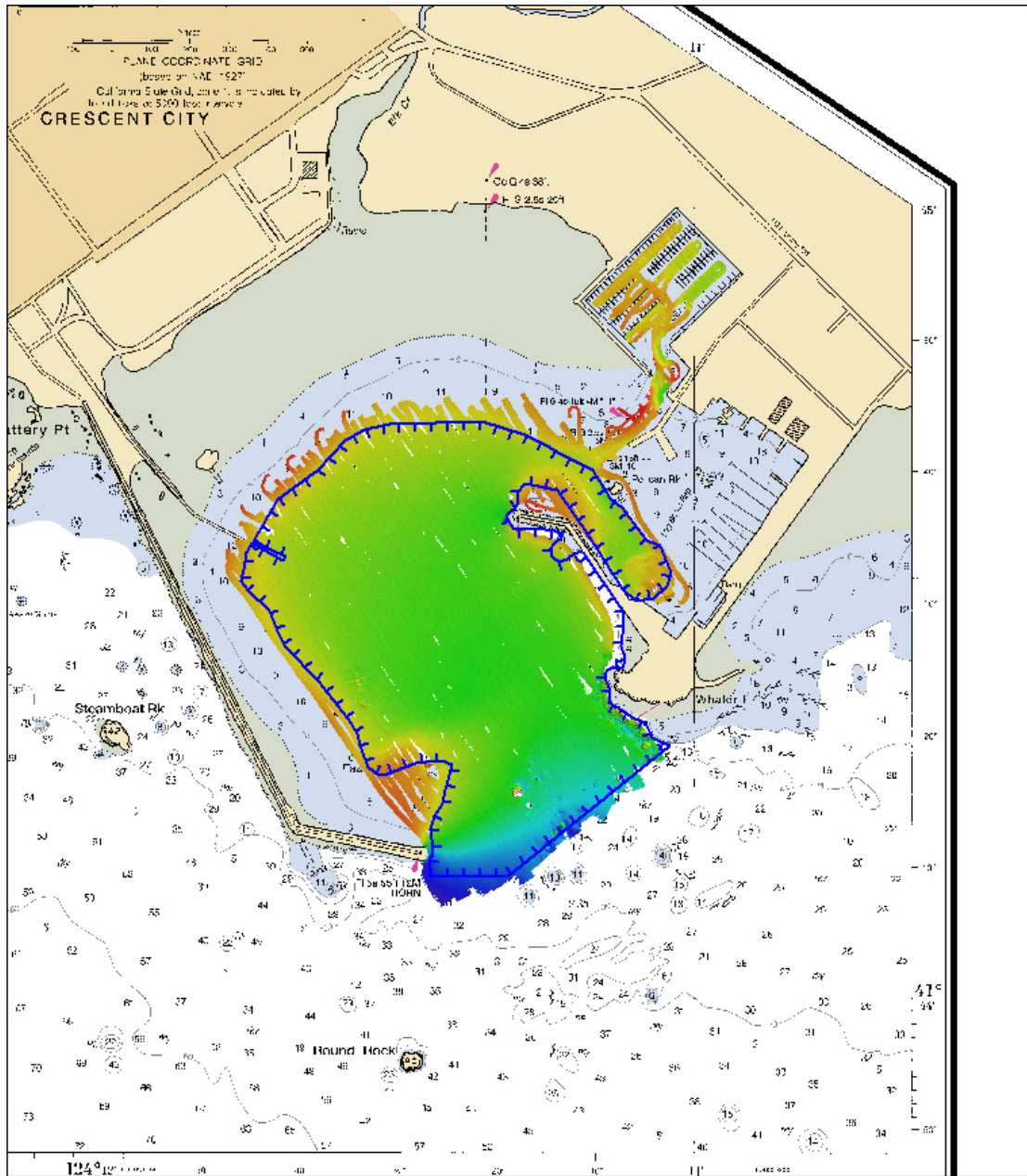


Figure 1: Crescent City multibeam sonar data coverage.

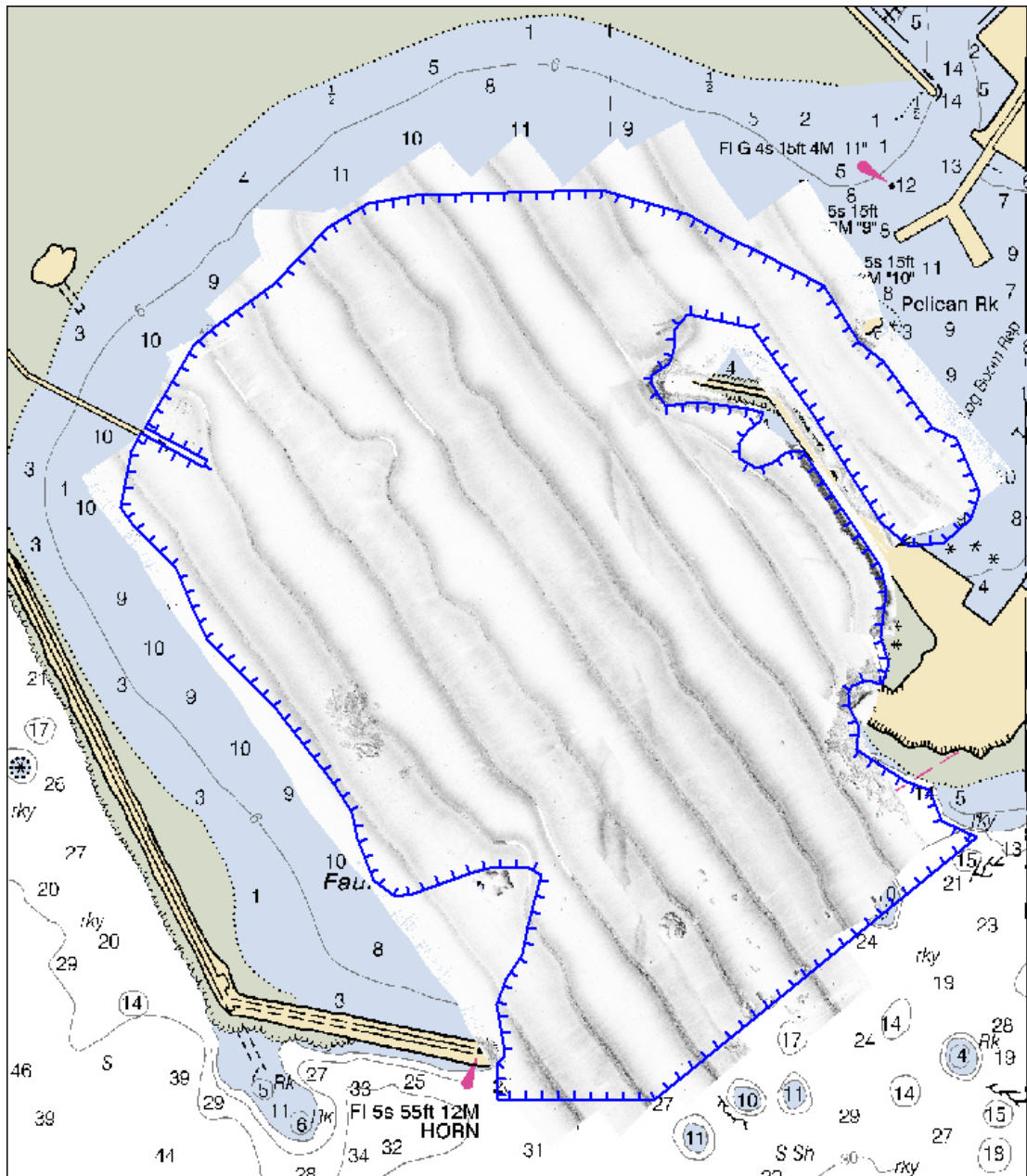


Figure 2: Crescent City 100% side scan sonar data coverage.

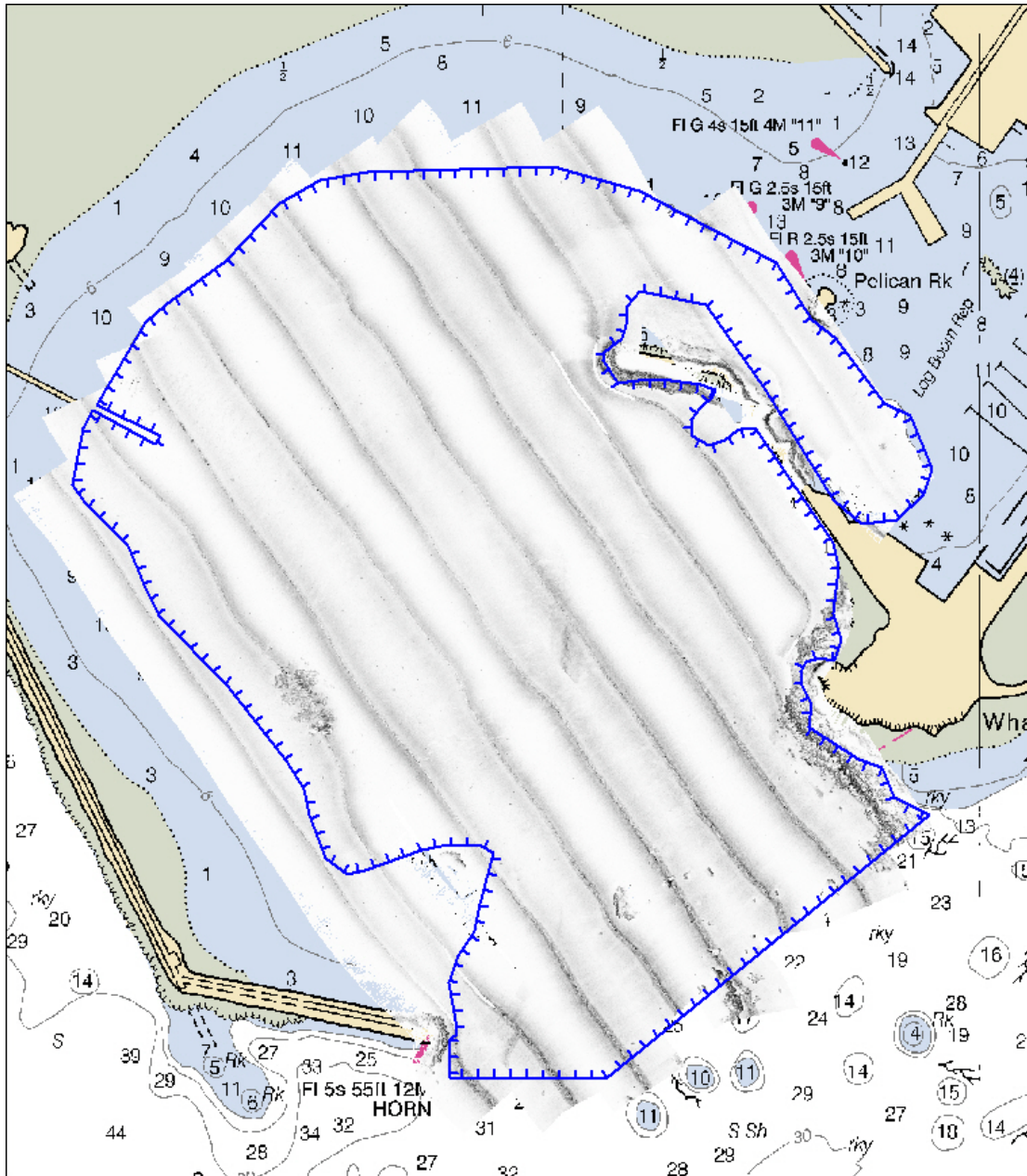


Figure 3: Crescent City 200% side scan sonar data coverage.

B. DATA ACQUISITION AND PROCESSING *See Evaluation Report*

B.1 EQUIPMENT

Data were acquired by NOAA Survey boat S3003, which is a 10-meter hydrographic survey vessel with a transducer draft of 0.54 meters.

NOAA Survey boat S3003 acquired soundings, imagery, and sound velocity profiles. Soundings and imagery were acquired by SIMRAD EM3000 multibeam echosounder. Imagery was acquired by KLEIN 3000 side scan sonar. Water column sound velocity data was acquired with a Sea-Bird SBE 19+ CTD.

NOAA Survey boat S3003 positioning and attitude data were determined with an Applanix POS/MV 320 Version 4 GPS-aided inertial navigation system.

Refer to the Data Acquisition and Processing Report (DAPR)* for detailed equipment and vessel configuration information.

**Filed with original field records and submitted to HSD with final H-Cell.*

B.2 QUALITY CONTROL

B.2.1 Side Scan Sonar Quality Control

Daily confidence checks were made by observing the outer ranges of the side scan sonar images. A good check consisted of distinguishing contacts corresponding to charted features such navigational Fixed Aids and other cultural features across the entire range of the side scan trace.

B.2.2 Shallow Water Multibeam Quality Control

Numerous crab pots were present, impacting the coverage of the survey area. Too many floats made the navigation of certain areas impossible, resulting in the deviations from planned lines seen in the coverage plots. Crab pots are distinguished

in the data by their typical dimensions of a rectangular box not more than 6 ft long by 2-3 ft high. Objects deemed by the hydrographer to be crab pots were not designated as significant or obstructions, as they are intended as temporary structures, and do not pose a threat to vessel clearance. *Concur.*

Kelp and unknown depth of dangerous rocks prevented NRT6 from surveying directly over Fauntleroy Rock, and the charted dangerous rock adjacent to the 6 ft rock at the harbor entrance. *Concur.*

All calibrations and systems tests were conducted prior to the beginning of survey operations in Crescent City. Refer to this project's DAPR* and HSRR* for detailed discussion of SWMB system calibrations, data acquisition, and data processing.

B.2.3 BASE Surfaces

One CARIS HIPS BASE (*Bathymetry Associated with Statistical Error*) surface, which incorporates each sounding's total propagated error (TPE), was created. The finalized BASE surface contains eight layers: depth, uncertainty, density, mean, standard deviation, hypothesis strength, hypothesis count and user nominated. Refer to this project's DAPR* for detailed discussion of BASE Surface generation and processing. One Bathymetric Attributed Grid (BAG) was created from the finalized BASE surface.

The following Field sheet was generated as part of this survey:

Table 1: Fieldsheets, BASE Surfaces and BAG (Bathymetric Attributed Grid) surfaces created.

<u>Fieldsheet</u>	<u>#BASE Surfaces</u>	<u>Resolution</u>	<u>Purpose</u>
F00562	2	1m	Coverage & Finalized
F00562_1m	1	1m	BAG Generation

**Filed digitally with original field records.*

B.2.4 Crosslines

Approximately 2 LNM of crosslines were conducted, totaling about 48 **6.39%** of the planned survey lines. BASE surfaces were examined and no systematic errors in the SWMB system were found. **Concur.**

B.3 CORRECTIONS TO ECHO SOUNDING

All methods or instruments used are detailed in the project DAPR*. A table of all sound velocity casts is located in Separate II. *

***Filed digitally with original field records.**

C. VERTICAL AND HORIZONTAL CONTROL *See Evaluation Report*

C.1 VERTICAL CONTROL

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at Crescent City, CA (941-9750) was the sole water level station for this project. See Figure 2 for station location and tide zone boundaries. The tide zoning file “M917NRT62008CORP” was applied during processing. **Concur. No additional correction required during office processing.**

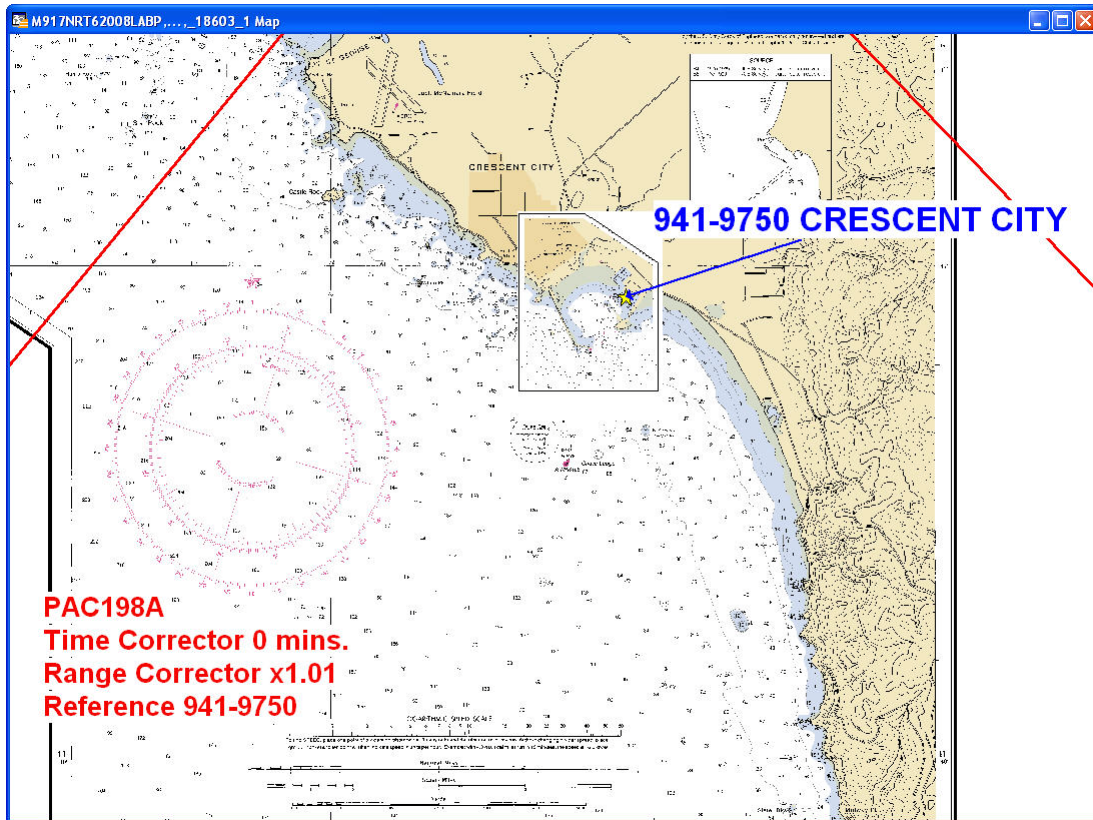


Figure 4: Preliminary Tide Zoning

The preliminary/final zones and correctors used for this survey are as follows:

Table 1: Preliminary Tide Zones & Correctors

<u>Zone Name</u>	<u>Time Correctors (mins)</u>	<u>Range Ratio</u>	<u>Predicted Reference</u>
PAC198	0	x1.01	941-9750

A Request for Smooth Tides was sent to N/OPS1 on February 2, 2009 and is included in Appendix IV Tides & Water Levels.* Observed water levels from the N/OPS1 CO-OPS website were downloaded and applied to all sounding data with preliminary tide zoning. Refer to the 2008 DAPR** for a summary of the methods used to determine, evaluate, and apply tide corrections to sounding data.

**Appended to this report.*

***Filed digitally with original field records.*

C.2 HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 10. *Concur.*

Horizontal position was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon station at Cape Mendocino, CA (292 kHz). No horizontal control stations were established for this survey.

Horizontal dilution of precision (HDOP) was monitored daily. The observed HDOP values did not exceed 4.00.

D. RESULTS AND RECOMMENDATIONS *See Evaluation Report*

D.1 CHART COMPARISON

Data accuracy standards and bottom coverage requirements have been met and survey data for survey F00562 are adequate to supersede charted data in their common areas. *Concur.*

There is one raster chart affected by this survey⁸
There is no ENC coverage in Crescent City Harbor.

Table 2: Affected Charts

<u>Chart Number</u>	<u>Edition</u>	<u>Edition Date</u>
18603	16 th	December 2002

<u>ENC Cell</u>	<u>Last Updated</u>	<u>Issue Date</u>	<u>Edition</u>
N/A			

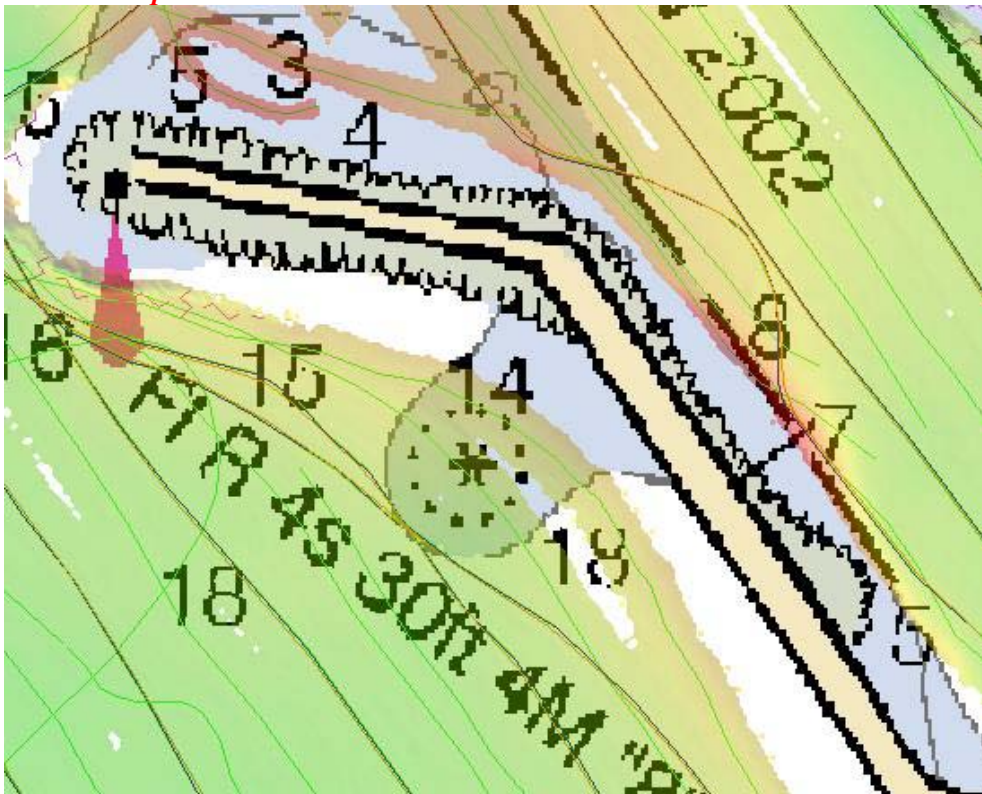
D.1.1 General Agreement with Charted Soundings

Depths from survey F00562, within the main harbor area, for the most part, are 1 to 2 feet shoaler than depths on chart 18603, and the contour lines in that area need to be repositioned to reflect new survey data. *Concur.*

Significant shoaling is encroaching from the northwest into the channel leading into the inner boat basin from around Lt "11" and just into the boat basin. Contours need to be adjusted southeastward into the channel according to current bathymetry. *Concur.*

The southern offshore limit of the survey area is quite rocky with numerous uncharted rocks. The Hydrographer recommends a future full-bottom coverage survey of the approaches to the harbor.

The charted rock adjacent to the jetty extending north of Whaler Island is not present in either bathymetry or imagery data. The Hydrographer recommends removing this feature from the chart. See the following image. *Concur. Reference Appendix 2 Feature Report.*



D.1.2 Dangers to Navigation (Dton's)

There are no DTONs located in survey F00562. *Concur.*

D.1.3 AWOIS Items

No AWOIS items were assigned for F00562. *Concur.*

D.2 ADDITIONAL RESULTS

D.2.1 Prior Surveys

No prior surveys were listed for comparison in the project instructions. *Concur.*

D.2.2 Aids to Navigation and Other Detached Positions

NRT6 took positions on the five AtoNs requested in the table included with the project instructions CD. NRT6 used the Trimble GPS backpack for all AtoN positioning. Please see the AtoNs folder, located in Appendix 5.* *Filed digitally with original field records as the reference folder is not appended to this report within Appendix 5.*

D.2.3 Bridges and Overhead Cables

There are no bridges or overhead cables in the survey area. *Concur.*

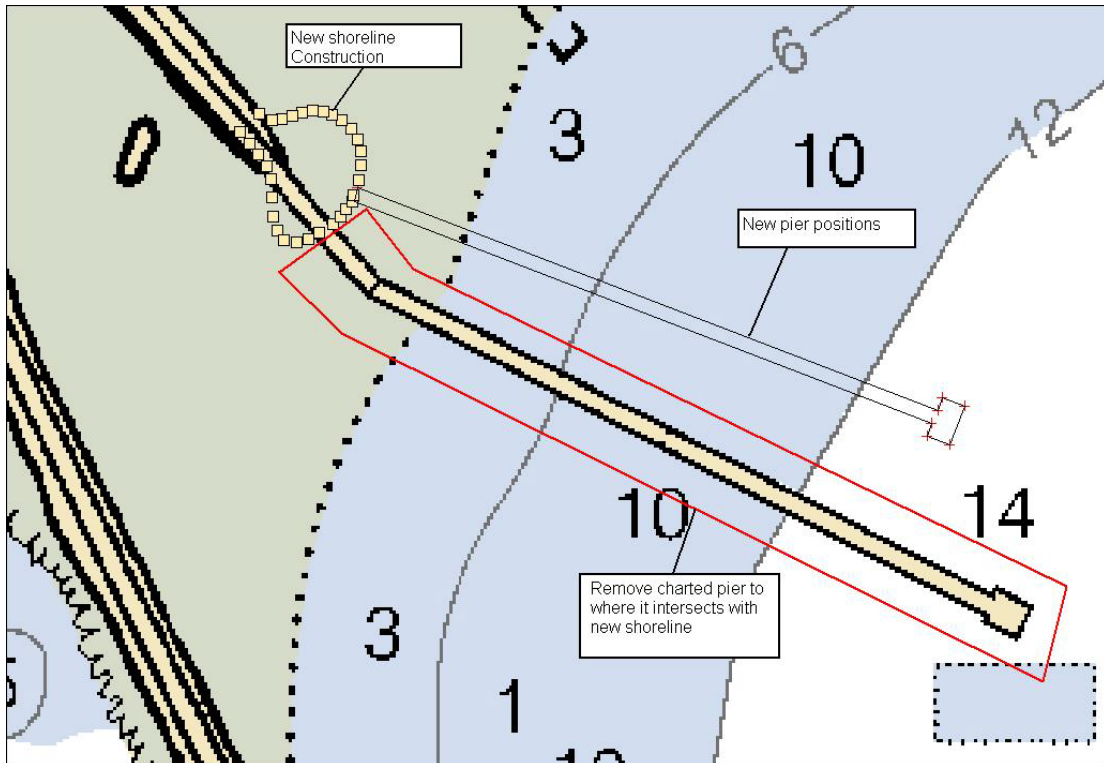
D.2.4 Ferry Routes

There are no ferry routes in the survey area. *Concur.*

D.2.5 Submarine Cables and Pipelines

No submarine cables or pipelines were located in the survey area. *Concur.*

D.2.6 Shoreline



New shoreline construction and pier.

New shoreline construction and a new pier exist near the charted B Street pier. NRT6 took positions on the new pier and shoreline construction. Shoreline data files are located in Appendix 5*, in the Shoreline folder. The hydrographer recommends charting the new pier using the positions given in the table B_St_Pier, and the new shoreline using positions in the table B_St_Pier_Shoreline. The shoreline plotted in table B_St_Pier_shoreline is surrounded by approximately 2 meters (horizontally) of rip rap. The charted pier should be removed, and replaced by submerged pier ruins. Remnants of the old pier were detected by both sidescan sonar and multibeam echosounder. See feature 1.4 in the Survey Feature report for more information on the pier ruins. ***Recommend appending new pier shoreline construction as depicted in F00562's H-cell.***

**** Filed digitally with original field records as the reference folder is not appended to this report within Appendix 5.***

E. APPROVAL SHEET

S-M917-NRT6-08
Crescent City, California
Survey Registry No. F00562

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All bathymetry models, 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.

Also submitted in association with this descriptive report has been a series of reports and data:

- SEPARATES TO ACCOMPANY PROJECT S-M917-NRT6-08
- S-M917-NRT6-08 HORIZONTAL AND VERTICAL CONTROL REPORT
- APRIL 2008 DATA ACQUISITION AND PROCESSING REPORT

Approved and Forwarded:

**eric m
moore**

Digitally signed by eric m moore
DN: cn=eric m moore, email=eric.
m.moore@noaa.gov, o=NOAA S/V
BAY HYDROGRAPHER, ou=NOAA/
NOS/OCS/HSD/OPS, c=US
Date: 2009.05.09 12:37:36 -07'00'

Eric Moore, NOAA
Physical Science Technician

Appendix I

Dangers to Navigation

There are no DtoNs located in survey F00562

Appendix II

Feature Report

1. Charted Features
2. Uncharted Features

F00562 Feature Report

Registry Number: F00562
State: California
Locality: Crescent City
Sub-locality: Crescent City Harbor
Project Number: OPR-M917-NRT6-08
Survey Dates: 11/18/2008 - 06/18/2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
18603	16th	12/01/2002	1:10,000 (18603_2)	USCG LNM: 04/05/2005 (05/27/2008) NGA NTM: None (05/31/2008)
18603	16th	12/01/2002	1:40,000 (18603_1)	USCG LNM: 10/03/2006 (06/02/2009) NGA NTM: 08/05/2006 (06/06/2009)
18600	14th	01/26/2002	1:196,948 (18600_1)	[L]NTM: ?
18010	20th	02/10/2001	1:811,980 (18010_1)	[L]NTM: ?
18007	32nd	07/01/2005	1:1,200,000 (18007_1)	[L]NTM: ?
501	12th	11/01/2002	1:3,500,000 (501_1)	[L]NTM: ?
530	31st	06/01/2005	1:4,860,700 (530_1)	[L]NTM: ?
50	6th	06/01/2003	1:10,000,000 (50_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	14-ft Sounding 81/96	Shoal	4.49 m	41° 44' 13.4" N	124° 11' 13.1" W	---
2.1	0004 - add Uncharted Pier	SSS	[None]	41° 44' 35.2" N	124° 11' 42.8" W	---
2.2	0001 - revise USCG Pier	SSS	[None]	41° 44' 31.7" N	124° 11' 07.4" W	---
2.3	2859/6 - chart a 7 Rk	Rock	2.07 m	41° 44' 22.2" N	124° 11' 33.3" W	---
2.4	4954/6 - chart a 1 Rk (near Fauntleroy Rk)	Rock	0.31 m	41° 44' 17.7" N	124° 11' 26.3" W	---
2.5	14121/13 - chart Obstn Area (foul ground)	Obstruction	3.38 m	41° 44' 34.0" N	124° 11' 42.7" W	---
2.6	3066/115 - chart a 12 Rk	Rock	3.67 m	41° 44' 21.2" N	124° 11' 08.2" W	---
2.7	5010/103 - extend danger limits around Fauntleroy Rk	Rock	1.68 m	41° 44' 17.7" N	124° 11' 26.9" W	---

2.8	117/120 - chart a Rk, unknown depth	Shoal	3.31 m	41° 44' 16.8" N	124° 11' 07.4" W	---
2.9	606/8 - chart a 10 Rk	Rock	3.27 m	41° 44' 16.9" N	124° 11' 15.5" W	---
2.10	3000/12 - chart a 10 Rk, seabed area rky	Rock	3.24 m	41° 44' 23.7" N	124° 11' 33.8" W	---
2.11	5777/15 - chart a 10 Rk	Rock	3.22 m	41° 44' 18.5" N	124° 11' 03.2" W	---
2.12	1052/118 - chart a 6-ft Subm Pile	Obstruction	1.77 m	41° 44' 30.8" N	124° 11' 02.8" W	---
2.13	586/120 - chart a 4 Rk	Rock	1.14 m	41° 44' 17.0" N	124° 11' 26.6" W	---
2.14	charted wreck: Disproved / Delete	GP	[None]	41° 44' 16.6" N	124° 11' 25.7" W	---
2.15	Charted Rock : Delete	GP	[None]	41° 44' 34.2" N	124° 11' 13.7" W	---
2.16	2652/59 - chart an 11 Obstn	Obstruction	3.50 m	41° 44' 32.0" N	124° 11' 06.2" W	---

1 - Charted Features

1.1) 14-ft Sounding 81/96

Survey Summary

Survey Position: 41° 44' 13.4" N, 124° 11' 13.1" W
Least Depth: 4.49 m (= 14.72 ft = 2.453 fm = 2 fm 2.72 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.885 m ; **TVU (TPEv)** ± 0.408 m
Timestamp: 2008-324.19:57:50.494 (11/19/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-324 / 316_1957
Profile/Beam: 81/96
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Charted 14 ft sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-324/316_1957	81/96	0.00	000.0	Primary
hdc_data/nrt6_s3003_klein3000_sss100/2008-323/sonar_data081118103500	0001	4.59	019.1	Secondary
hdc_data/nrt6_s3003_klein3000_sss200/2008-323/sonar_data081118123700	0001	5.12	135.8	Secondary

Hydrographer Recommendations

Retain as charted.

Cartographically-Rounded Depth (Affected Charts):

14ft (18603_2, 18603_1)

2 ½fm (18600_1, 18010_1, 18007_1, 530_1)

4.5m (501_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: INFORM - rocky outcrops
 OBJNAM - 14-ft sounding
 QUASOU - 6:least depth known
 SORDAT - 20081121

SORIND - US,US,nsurf,F00562

TECSOU - 2:found by side scan sonar

Office Notes

Concur with clarification. SS imagery indicates the feature is composed of rock clusters along the sea floor. Chart a Rk with a depth of 14 ft. in Latitude 41°44'13.463"N, Longitude 124°11'13.086"W.

Feature Images



Figure 1.1.1

2 - New Features

2.1) 0004 - add Uncharted Pier

Survey Summary

Survey Position: 41° 44' 35.2" N, 124° 11' 42.8" W
Least Depth: [None]
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2008-357.10:03:37 (12/22/2008)
Survey Line: hdc_data / nrt6_s3003_klein3000_sss100 / 2008-323 / sonar_data081118105300
Contact/Point: 0004/1
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Mis-charted "new" pier

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_klein3000_sss100/2008-323/sonar_data081118105300	0004	0.00	000.0	Primary
hdc_data/nrt6_s3003_klein3000_sss200/2008-323/sonar_data081118125400	0001	2.99	311.7	Secondary

Hydrographer Recommendations

New pier needs to be surveyed

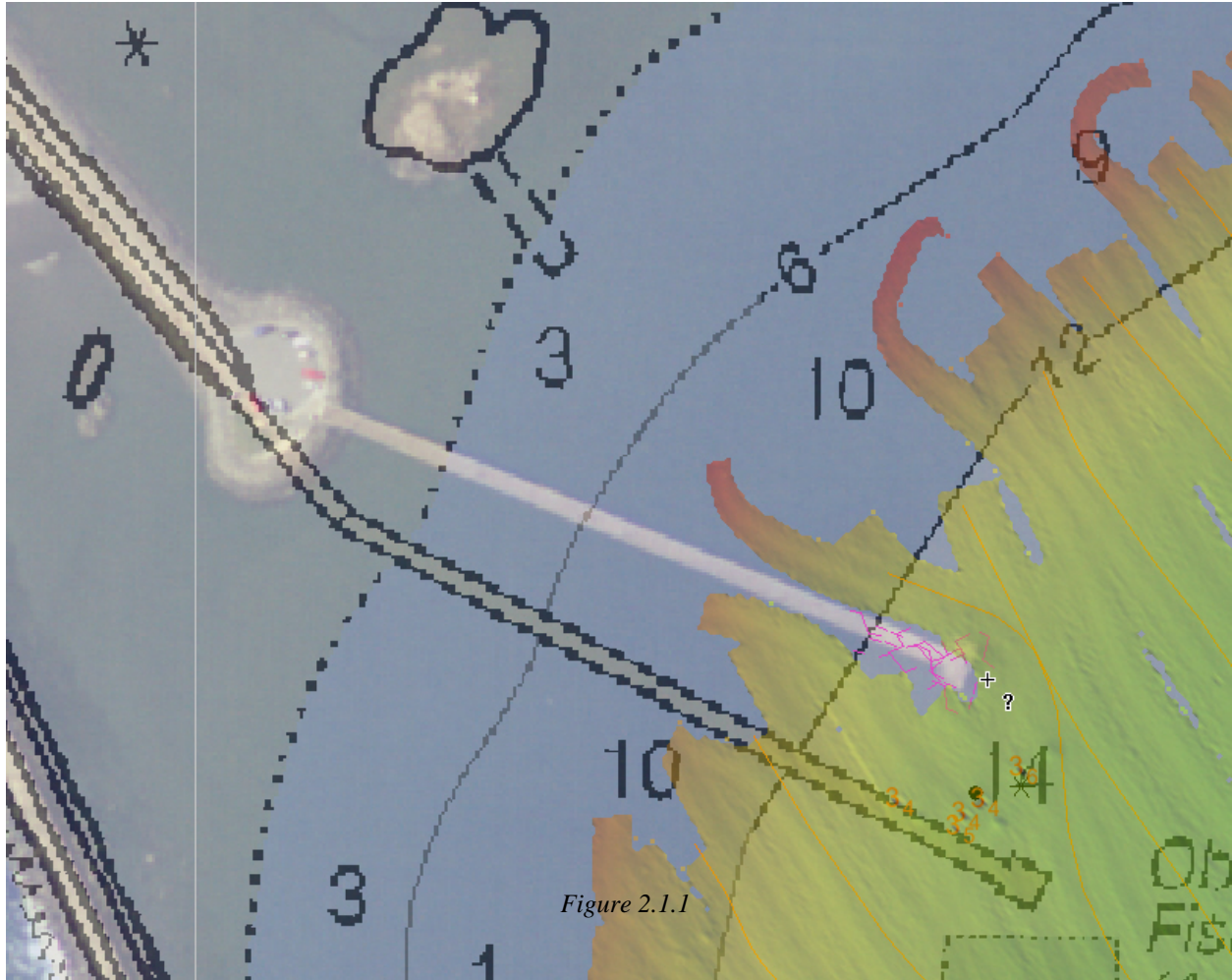
S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: CATSLC - 4:pier (jetty)
 OBJNAM - uncharted pier
 SORDAT - 20050629
 SORIND - US,US,ortho,NAIP54497647
 STATUS - 1:permanent
 WATLEV - 2:always dry

Office Notes

Concur with clarificatin. Recommend to reference ortho-imagery and update the chart with uncharted pier extents.

Feature Images



2.2) 0001 - revise USCG Pier

Survey Summary

Survey Position: 41° 44' 31.7" N, 124° 11' 07.4" W
Least Depth: [None]
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2008-357.10:25:22 (12/22/2008)
Survey Line: hdc_data / nrt6_s3003_klein3000_sss100 / 2008-323 / sonar_data081118114200
Contact/Point: 0001/1
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Charted CG pier

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_klein3000_sss100/2008-323/sonar_data081118114200	0001	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted.

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: CATSLC - 4:pier (jetty)
 OBJNAM - USCG Pier
 SORDAT - 20050629
 SORIND - US,US,ortho,NAIP54497647

Office Notes

Concur with clarification. The charted pier is short by approximately 19m as compared to the ortho-imagery. Recommend to revise the pier length as portrayed in the Ortho-imagery.

Feature Images

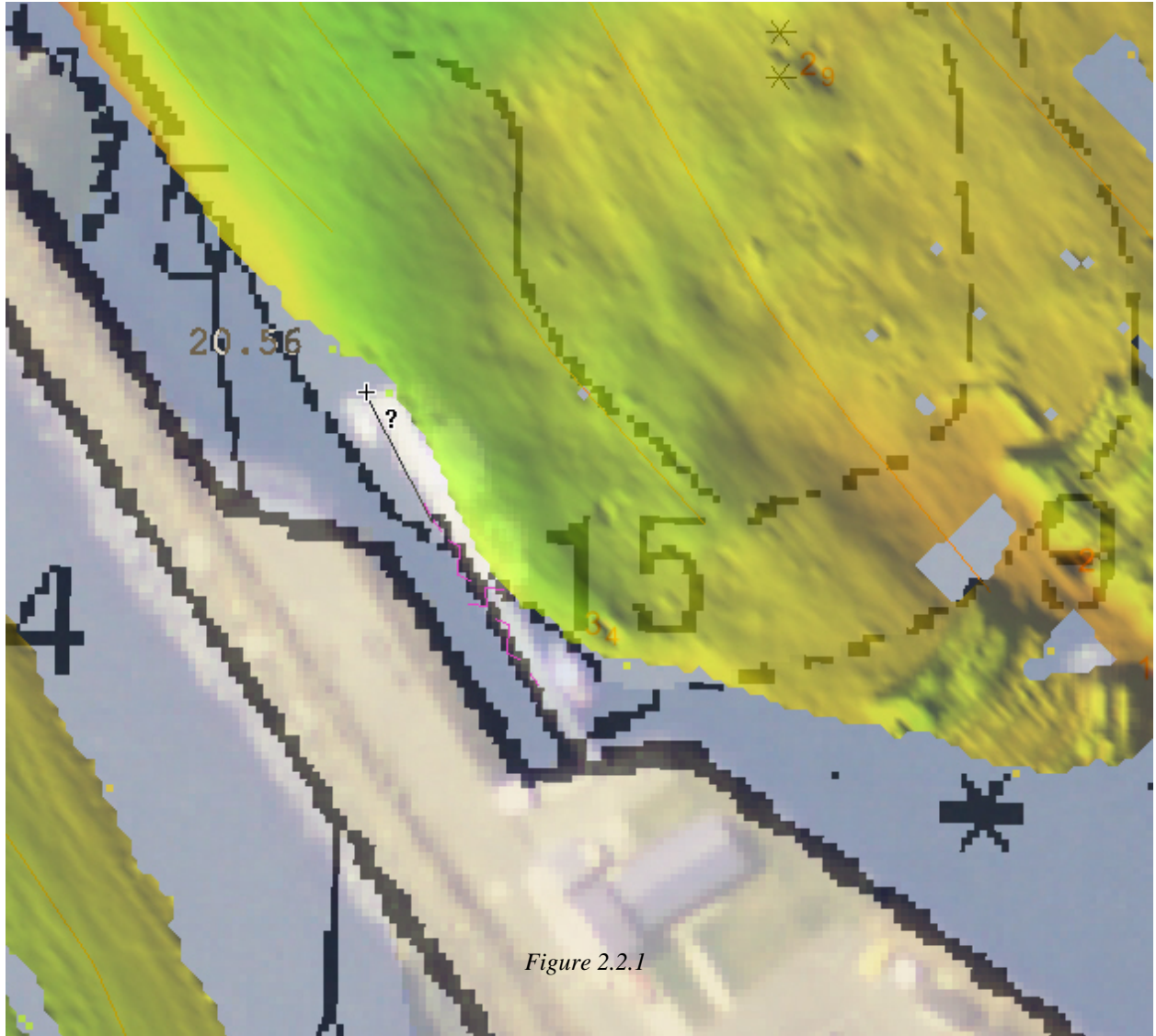


Figure 2.2.1

2.3) 2859/6 - chart a 7 Rk

Survey Summary

Survey Position: 41° 44' 22.2" N, 124° 11' 33.3" W
Least Depth: 2.07 m (= 6.80 ft = 1.134 fm = 1 fm 0.80 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 7.878 m ; TVU (TPEv) ± 0.408 m
Timestamp: 2008-323.22:09:18.143 (11/18/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-323 / 210_2205
Profile/Beam: 2859/6
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Chtd rock and surrounding shoal soundings

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-323/210_2205	2859/6	0.00	000.0	Primary
hdc_data/nrt6_s3003_klein3000_sss200/2008-323/sonar_data081118130300	0001	6.07	058.4	Secondary
hdc_data/nrt6_s3003_klein3000_sss100/2008-323/sonar_data081118110400	0003	10.60	048.9	Secondary
hdc_data/nrt6_s3003_klein3000_sss100/2008-323/sonar_data081118105300	0002	15.75	261.7	Secondary

Hydrographer Recommendations

Chart 7 ft rock to replace 10ft sounding. Remove adjacent 5ft rock, disproved by MB. Retain 11 ft sounding as charted.

Cartographically-Rounded Depth (Affected Charts):

7ft (18603_2, 18603_1)

1fm (18600_1, 18010_1, 18007_1, 530_1)

2.1m (501_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: QUASOU - 6:least depth known

STATUS - 1:permanent

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 2.074 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. The charted 5-ft rock located in the vicinity of 41°44'22.294"N 124°11'34.805"W is considered disproved via Side Scan and Multibeam coverage. Delete the 5 Rk and chart a Rk with a depth of 7 ft in Latitude 41°44'22.231"N, Longitude 124°11'33.297"W.

Feature Images

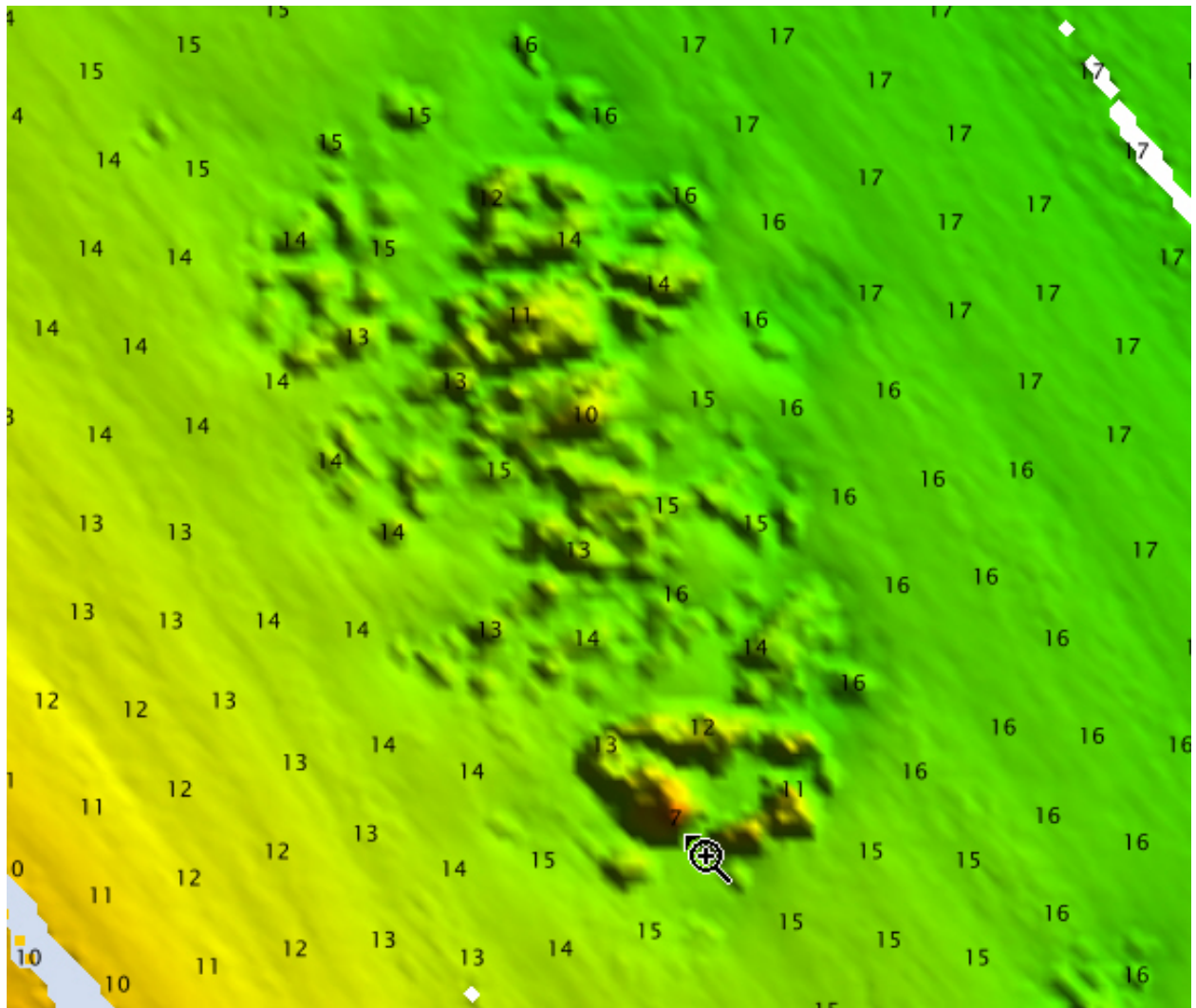


Figure 2.3.1

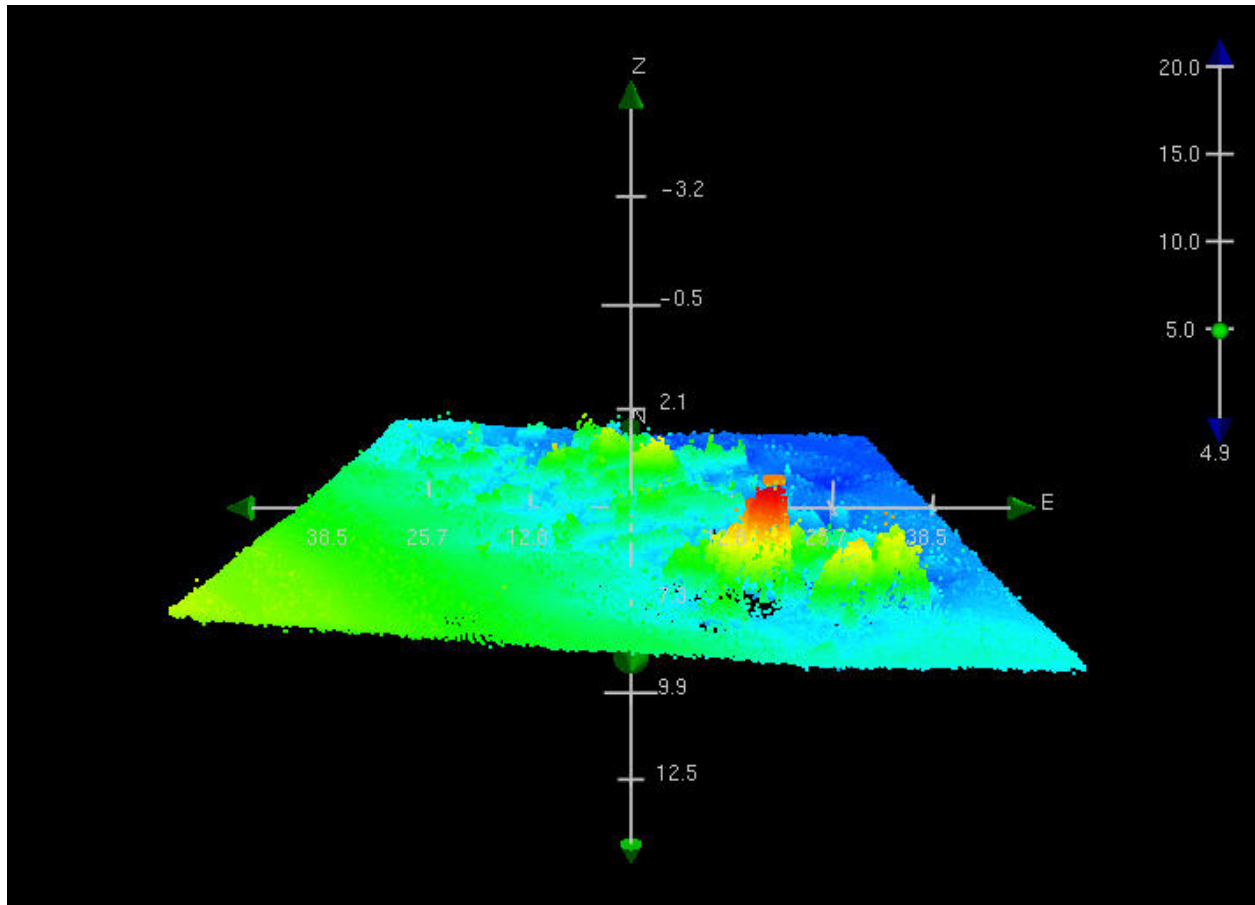


Figure 2.3.2

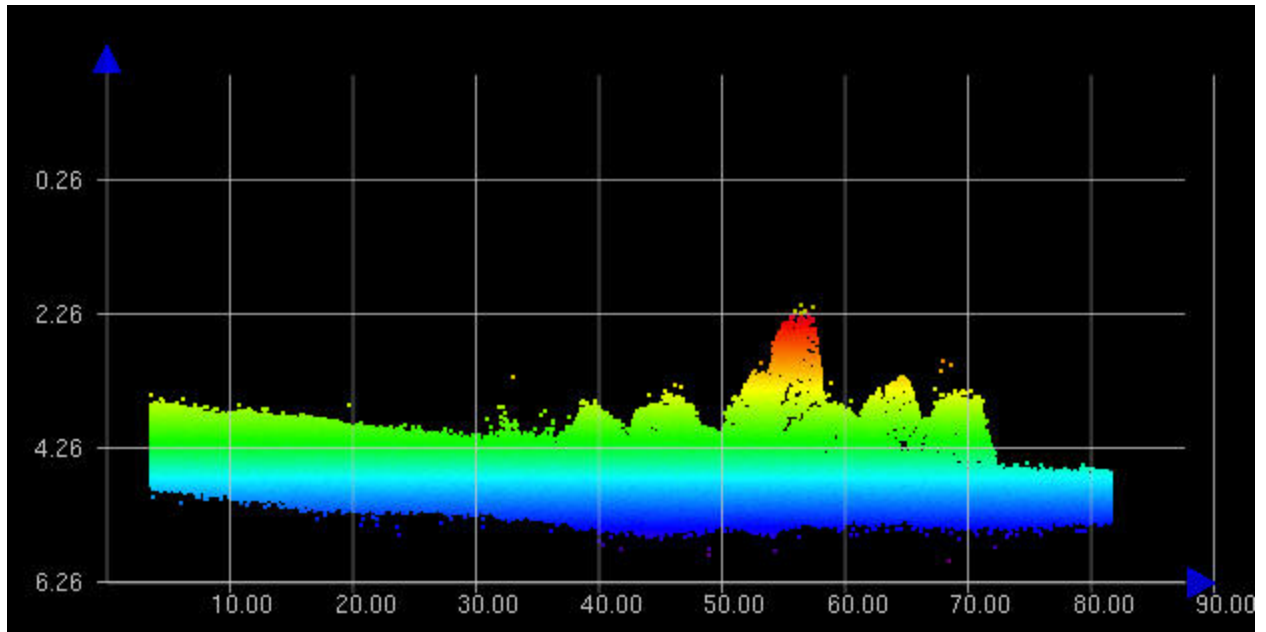


Figure 2.3.3

2.4) 4954/6 - chart a 1 Rk (near Fauntleroy Rk)

Survey Summary

Survey Position: 41° 44' 17.7" N, 124° 11' 26.3" W
Least Depth: 0.31 m (= 1.01 ft = 0.168 fm = 0 fm 1.01 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.893 m ; **TVU (TPEv)** ± 0.406 m
Timestamp: 2008-324.21:17:06.300 (11/19/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-324 / 301_2110
Profile/Beam: 4954/6
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Charted, Fauntleroy rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-324/301_2110	4954/6	0.00	000.0	Primary
hdc_data/nrt6_s3003_klein3000_sss200/2008-323/sonar_data081118125400	0002	9.77	276.1	Secondary
hdc_data/nrt6_s3003_klein3000_sss100/2008-323/sonar_data081118105300	0001	16.90	305.1	Secondary

Hydrographer Recommendations

Retain as charted

Cartographically-Rounded Depth (Affected Charts):

1ft (18603_2, 18603_1)

0fm (18600_1, 18010_1, 18007_1, 530_1)

.3m (501_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: QUASOU - 6:least depth known
 STATUS - 1:permanent
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 0.308 m

VERDAT - 12:Mean lower low water

WATLEV - 5:awash

Office Notes

Concur w/clarification. Feature is not Fauntleroy Rk. Retain the charted Rk awash (Fauntleroy Rk) and add a Rk awash with a depth of 1 ft. in Latitude 41°44'17.718"N, Longitude 124°11'26.350"W.

2.5) 14121/13 - chart Obstn Area (foul ground)

Survey Summary

Survey Position: 41° 44' 34.0" N, 124° 11' 42.7" W
Least Depth: 3.38 m (= 11.09 ft = 1.848 fm = 1 fm 5.09 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.885 m ; **TVU (TPEv)** ± 0.407 m
Timestamp: 2008-324.21:29:14.012 (11/19/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-324 / 301_2110
Profile/Beam: 14121/13
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Pier ruins

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-324/301_2110	14121/13	0.00	000.0	Primary
hdc_data/nrt6_s3003_klein3000_sss100/2008-323/sonar_data081118105300	0005	6.88	203.8	Secondary
hdc_data/nrt6_s3003_klein3000_sss200/2008-323/sonar_data081118125400	0003	18.21	243.0	Secondary

Hydrographer Recommendations

Subm pier ruins exist where pier is charted. New pier aprx 50m NE of pier ruins needs to be surveyed.

Cartographically-Rounded Depth (Affected Charts):

11ft (18603_2, 18603_1)

1 $\frac{3}{4}$ fm (18600_1, 18010_1, 18007_1, 530_1)

3.4m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
 CONDTN - 2:ruined
 QUASOU - 6:least depth known
 STATUS - 1:permanent

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 3.380 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur w/clarification. Chart an area obstruction, foul ground (foul with pilings) in the vicinity of Latitude 41°44'32.083"N, Longitude 124°11'42.485"W.

2.6) 3066/115 - chart a 12 Rk

Survey Summary

Survey Position: 41° 44' 21.2" N, 124° 11' 08.2" W
Least Depth: 3.67 m (= 12.06 ft = 2.010 fm = 2 fm 0.06 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.900 m ; **TVU (TPEv)** ± 0.407 m
Timestamp: 2008-324.21:14:35.526 (11/19/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-324 / 301_2110
Profile/Beam: 3066/115
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

12-ft sounding

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-324/301_2110	3066/115	0.00	000.0	Primary

Hydrographer Recommendations

Chart a 12-ft sounding

Cartographically-Rounded Depth (Affected Charts):

12ft (18603_2, 18603_1)

2fm (18600_1, 18010_1, 18007_1, 530_1)

3.7m (501_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: QUASOU - 6:least depth known
 STATUS - 1:permanent
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 3.675 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

Do not concur, chart a Rk with a depth of 12 ft. in Latitude 41°44'21.249"N, Longitude 124°11'08.249"W.

2.7) 5010/103 - extend danger limits around Fauntleroy Rk

Survey Summary

Survey Position: 41° 44' 17.7" N, 124° 11' 26.9" W
Least Depth: 1.68 m (= 5.50 ft = 0.917 fm = 0 fm 5.50 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.884 m ; **TVU (TPEv)** ± 0.407 m
Timestamp: 2008-324.21:17:10.996 (11/19/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-324 / 301_2110
Profile/Beam: 5010/103
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-324/301_2110	5010/103	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

5ft (18603_2, 18603_1)

0 $\frac{3}{4}$ fm (18600_1, 18010_1, 18007_1, 530_1)

1.7m (501_1, 50_1)

S-57 Data

Geo object 1: Seabed area (SBDARE)
Attributes: NATSUR - 9:rock
Geo object 2: Underwater rock / awash rock (UWTROC)
Attributes: OBJNAM - 5-ft Rock at Fauntleroy Rk
 QUASOU - 6:least depth known
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 1.677 m

WATLEV - 3:always under water/submerged

Office Notes

5-ft submerged rock. Recommend to revise danger curve at Fauntleroy Rock to include the 5-ft rock interior of the danger limits. Create an area SBDARE feature referencing the final grid for extents. No other charting action required.

2.8) 117/120 - chart a Rk, unknown depth

Survey Summary

Survey Position: 41° 44' 16.8" N, 124° 11' 07.4" W
Least Depth: 3.31 m (= 10.87 ft = 1.812 fm = 1 fm 4.87 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.893 m ; **TVU (TPEv)** ± 0.408 m
Timestamp: 2008-324.19:26:23.045 (11/19/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-324 / 312_1926
Profile/Beam: 117/120
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Charted 10 ft and dangerous rock, depth unknown.

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-324/312_1926	117/120	0.00	000.0	Primary
hdc_data/nrt6_s3003_klein3000_sss200/2008-323/sonar_data081118122000	0001	5.74	266.2	Secondary

Hydrographer Recommendations

Retain as charted, MB depth is slightly deeper than charted 10 ft depth. NRT6 did not attempt to survey directly over the charted dangerous rock, due to kelp and concern for vessel safety.

Cartographically-Rounded Depth (Affected Charts):

11ft (18603_2, 18603_1)

1 $\frac{3}{4}$ fm (18600_1, 18010_1, 18007_1, 530_1)

3.3m (501_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol (\$CSYMB)

Attributes: INFORM - revise charted 10 sounding to a 10 Rk based on sss imagery

Office Notes

Coverage is incomplete within the area of the charted 10-ft sounding and rock of unknown depth. Recommend to revise the charted 10 ft. soundings to a Rk with an unknown depth (due to incomplete coverage in both Mb and SSS).

2.9) 606/8 - chart a 10 Rk

Survey Summary

Survey Position: 41° 44' 16.9" N, 124° 11' 15.5" W
Least Depth: 3.27 m (= 10.74 ft = 1.790 fm = 1 fm 4.74 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.857 m ; **TVU (TPEv)** ± 0.408 m
Timestamp: 2008-326.18:38:59.885 (11/21/2008)
Survey Line: hdcs_data / nrt6_s3003_em3000 / 2008-326 / 706_1838
Profile/Beam: 606/8
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Sounding on 10 ft rock

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdcs_data/nrt6_s3003_em3000/2008-326/706_1838	606/8	0.00	000.0	Primary
hdcs_data/nrt6_s3003_klein3000_sss100/2008-323/sonar_data081118102600	0001	6.90	317.1	Secondary

Hydrographer Recommendations

Chart 10 ft sounding.

Cartographically-Rounded Depth (Affected Charts):

10ft (18603_2, 18603_1)

1 $\frac{3}{4}$ fm (18600_1, 18010_1, 18007_1, 530_1)

3.3m (501_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: QUASOU - 6:least depth known
 STATUS - 1:permanent
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 3.273 m
 VERDAT - 12:Mean lower low water

Office Notes

Concur w/clarification. Chart a 10 ft. Rk in Latitude $41^{\circ}44'16.845''\text{N}$, Longitude $124^{\circ}11'15.524''\text{W}$.

2.10) 3000/12 - chart a 10 Rk, seabed area rky

Survey Summary

Survey Position: 41° 44' 23.7" N, 124° 11' 33.8" W
Least Depth: 3.24 m (= 10.63 ft = 1.771 fm = 1 fm 4.63 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.867 m ; **TVU (TPEv)** ± 0.407 m
Timestamp: 2008-324.20:43:12.273 (11/19/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-324 / 321_2039
Profile/Beam: 3000/12
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-324/321_2039	3000/12	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

10ft (18603_2, 18603_1)

1 $\frac{3}{4}$ fm (18600_1, 18010_1, 18007_1, 530_1)

3.2m (501_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: QUASOU - 6:least depth known
 STATUS - 1:permanent
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 3.239 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

Rock not specifically address by field unit. Recommend to create a SBDARE polygon delineating the rocky seafloor. Recommend to delete charted 11-ft sounding located in vicinity of Latitude 41°44'23.817"N, Longitude 124°11'34.407"W and chart a 10-ft rock at Latitude 41°44'23.702"N, Longitude 124°11'33.765"W.

2.11) 5777/15 - chart a 10 Rk

Survey Summary

Survey Position: 41° 44' 18.5" N, 124° 11' 03.2" W
Least Depth: 3.22 m (= 10.56 ft = 1.760 fm = 1 fm 4.56 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.868 m ; **TVU (TPEv)** ± 0.407 m
Timestamp: 2008-324.19:02:22.266 (11/19/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-324 / 309_1854
Profile/Beam: 5777/15
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

10 ft sounding on rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-324/309_1854	5777/15	0.00	000.0	Primary

Hydrographer Recommendations

Chart 10 ft sounding, adjust contour lines.

Cartographically-Rounded Depth (Affected Charts):

10ft (18603_2, 18603_1)

1 $\frac{3}{4}$ fm (18600_1, 18010_1, 18007_1, 530_1)

3.2m (501_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: QUASOU - 6:least depth known
 STATUS - 1:permanent
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 3.219 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

Do not concur, chart a Rk with a depth of 10 ft. in Latitude 41°44'18.488"N, Longitude 124°11'03.162"W

2.12) 1052/118 - chart a 6-ft Subm Pile

Survey Summary

Survey Position: 41° 44' 30.8" N, 124° 11' 02.8" W
Least Depth: 1.77 m (= 5.81 ft = 0.968 fm = 0 fm 5.81 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.847 m ; **TVU (TPEv)** ± 0.406 m
Timestamp: 2008-325.20:21:18.288 (11/20/2008)
Survey Line: hdcs_data / nrt6_s3003_em3000 / 2008-325 / 717_2019
Profile/Beam: 1052/118
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

6 ft sounding on an obstruction.

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdcs_data/nrt6_s3003_em3000/2008-325/717_2019	1052/118	0.00	000.0	Primary

Hydrographer Recommendations

Chart 6 ft Obstruction at this location.

Cartographically-Rounded Depth (Affected Charts):

6ft (18603_2, 18603_1)

1fm (18600_1, 18010_1, 18007_1, 530_1)

1.8m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
 QUASOU - 3:doubtful sounding
 STATUS - 1:permanent
 TECSOU - 3:found by multi-beam
 VALSOU - 1.771 m
 VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Verification interprets the object as a submerged pile. Chart 6-ft subm pile in Latitude 41°44'30.769"N, Longitude 124°11'02.786"W.

2.13) 586/120 - chart a 4 Rk

Survey Summary

Survey Position: 41° 44' 17.0" N, 124° 11' 26.6" W
Least Depth: 1.14 m (= 3.75 ft = 0.626 fm = 0 fm 3.75 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.881 m ; **TVU (TPEv)** ± 0.406 m
Timestamp: 2008-326.17:12:48.979 (11/21/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-326 / 702_1712a
Profile/Beam: 586/120
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-326/702_1712a	586/120	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

4ft (18603_2, 18603_1)

0 ½fm (18600_1, 18010_1, 18007_1, 530_1)

1.1m (501_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)
Attributes: QUASOU - 6:least depth known
 STATUS - 1:permanent
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 1.144 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

Located 4-ft Rock located within the common area of Fauntleroy Rock. Recommend to chart 4-ft Rk in Latitude $41^{\circ}44'16.977''\text{N}$, Longitude $124^{\circ}11'26.639''\text{W}$ and revise danger curve to include the 4-ft rock's location.

Feature Images

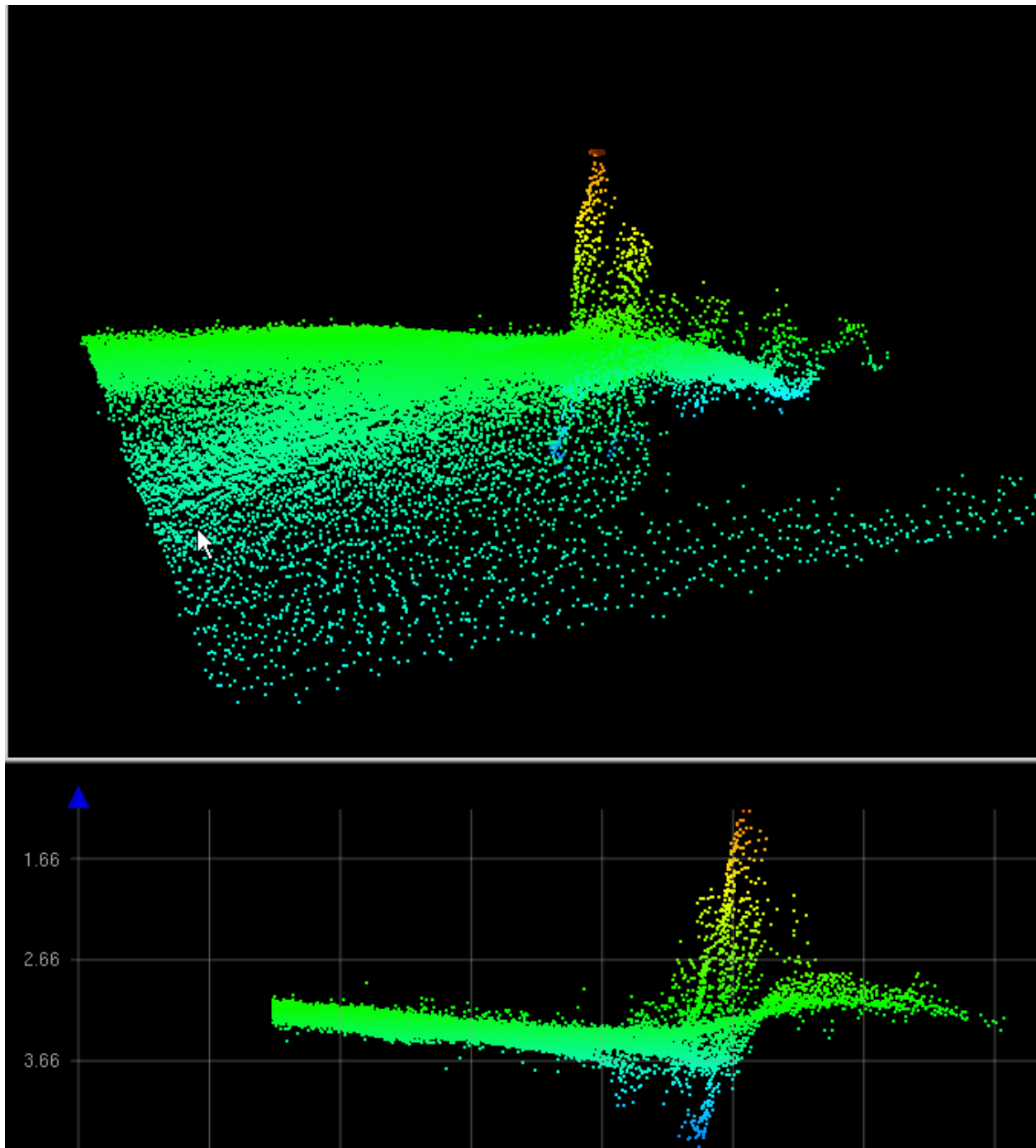


Figure 2.13.1

2.14) charted wreck: Disproved / Delete

Survey Summary

Survey Position: 41° 44' 16.6" N, 124° 11' 25.7" W
Least Depth: [None]
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-169.13:02:33 (06/18/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 1
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol (\$CSYMB)
Attributes: INFORM - dangerous sunken wreck considered disproved

Office Notes

Charted wreck not addressed by field unit. Sunken wreck considered disproved by side scan. Recommend to delete from the chart.

Feature Images

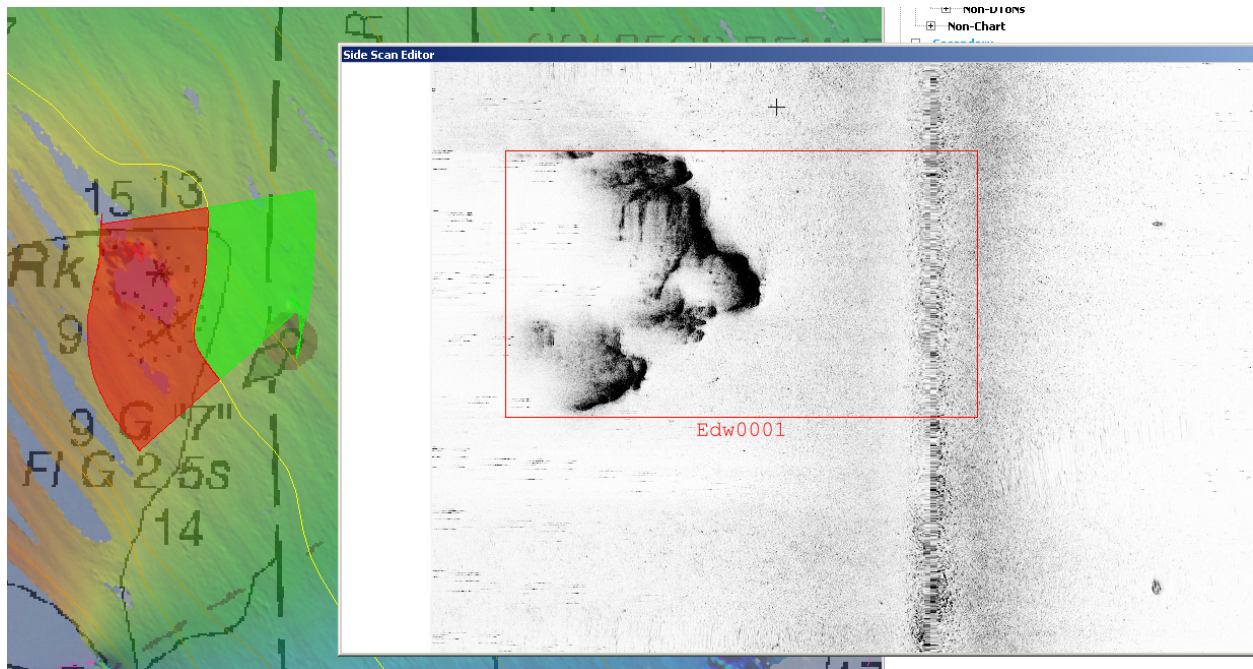


Figure 2.14.1

2.15) Charted Rock : Delete

Survey Summary

Survey Position: 41° 44' 34.2" N, 124° 11' 13.7" W
Least Depth: [None]
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-169.13:13:59 (06/18/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 2
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	2	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol (\$CSYMB)
Attributes: INFORM - dangerous rock considred disporve, delete from chart

Office Notes

Field unit recommends to delete dangerous rock from the chart. Reference F00562 Descriptive Report, page Section D.1.1, page 9-10. Concur. Verification agrees with field unit's assesment of rock at the charted location. SS imagery does portray rocks associated with the jetty inshore of the charted rock, but finds no single rock at the charted location. Recommend to delete the charted rock and chart current survey depths within the common area.

Feature Images

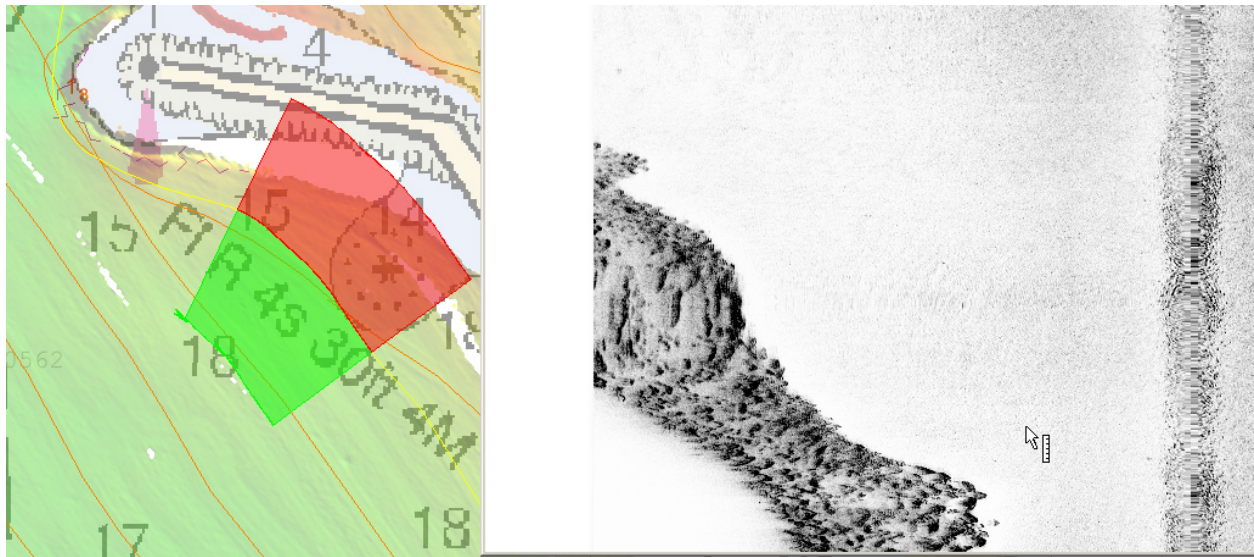


Figure 2.15.1

2.16) 2652/59 - chart an 11 Obstn

Survey Summary

Survey Position: 41° 44' 32.0" N, 124° 11' 06.2" W
Least Depth: 3.50 m (= 11.47 ft = 1.911 fm = 1 fm 5.47 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 7.883 m ; **TVU (TPEv)** ± 0.408 m
Timestamp: 2008-323.20:48:17.724 (11/18/2008)
Survey Line: hdc_data / nrt6_s3003_em3000 / 2008-323 / 102_2044
Profile/Beam: 2652/59
Charts Affected: 18603_2, 18603_1, 18600_1, 18010_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Identified during office processing as previously rejected data. Feature appears to be a sunken buoy.

Feature Correlation

Address	Feature	Range	Azimuth	Status
hdc_data/nrt6_s3003_em3000/2008-323/102_2044	2652/59	0.00	000.0	Primary

Hydrographer Recommendations

Chart as an obstruction.

Cartographically-Rounded Depth (Affected Charts):

11ft (18603_2, 18603_1)
 1 ¾fm (18600_1, 18010_1, 18007_1, 530_1)
 3.5m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 STATUS - 1:permanent
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 3.495 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

Chart an Obstn with a depth of 11 ft. in Latitude 41°44'31.971"N, Longitude 124°11'06.182"W.



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : April 3, 2009

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: S-M917-NRT6-2008
HYDROGRAPHIC SHEET: F00562

LOCALITY: Crescent City Harbor, Crescent City, CA
TIME PERIOD: November 18 - 21, 2008

TIDE STATION USED: 941-9750 Crescent City, CA
Lat. 41° 44.7'N Long. 124° 11.0' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.900 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project S-M917-NRT6-2008, during the time period between November 18 to 21, 2008.

Please use the zoning file "M917NRT6CORP" submitted with the project instructions for S-M917-NRT6-2008. Zone PAC198A is the applicable zone for F00562.

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).

Peter J. Stone

Digitally signed by Peter J. Stone
DN: cn=Peter J. Stone, o=CO-OPS, ou=NOAA/
NOS, email=peter.stone@noaa.gov, c=US
Date: 2009.04.06 06:54:58 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION



ST GEORGE REEF
AND CRESCENT CITY HARBOR

SOUNDINGS IN FEET

Final Tidal Zoning
for S-M917-NRT6-2008, F00562
Crescent City, CA
(Preliminary as Final)

941-9750 CRESCENT CITY

PAC198A
Time Corrector 0 mins.
Range Corrector x1.01
Reference 941-9750

SOUNDINGS IN FEET

St George Reef
18603



**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Survey F00562**

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 and review data at the Atlantic Hydrographic Branch (AHB):

CARIS HIPS/SIPS version 6.1 SP2 hotfix 7
Pydro version 9.9 (r2712)
CARIS BASE Manager 2.1 SP1 hotfix 10
CARIS S-57 Composer 2.0 hotfix 2

B.2. QUALITY CONTROL

H-Cell

The AHB source depth grid was a 1m resolution field submitted BASE surface for survey F00562. Survey scale soundings were extracted from the 1m resolution surface at a 1:5,000 scale using a radius of 1m. Depth curves were created at the depth intervals represented on charts 18603. Soundings were selected for charting using the latest raster chart and depth contours used as background for sounding placement. Soundings were then checked for conflicts, corrected to remove conflicts, and edited to allow for proper sounding compilation placement with respect to existing charted depths.

The compilation products and Stand Alone HOB Files (SAHOB) are detailed in the Compilation Process Log of this document. All individual SAHOB files were assembled in BASE Editor during H-Cell compilation.

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

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

The F00562 CARIS H-Cell final deliverables include the following products:

F00562_CS.000	1:10,000 Scale	F00562 H-Cell with Chart Scale Soundings
F00562_SS.000	1:5,000 Scale	F00562 Survey Scale Soundings and Contours

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by field personnel. Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW). Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 10.

D. RESULTS AND RECOMMENDATIONS

Chart Comparison

18603 (16th Edition, Dec./08)

Corrected through NM Nov. 30/02

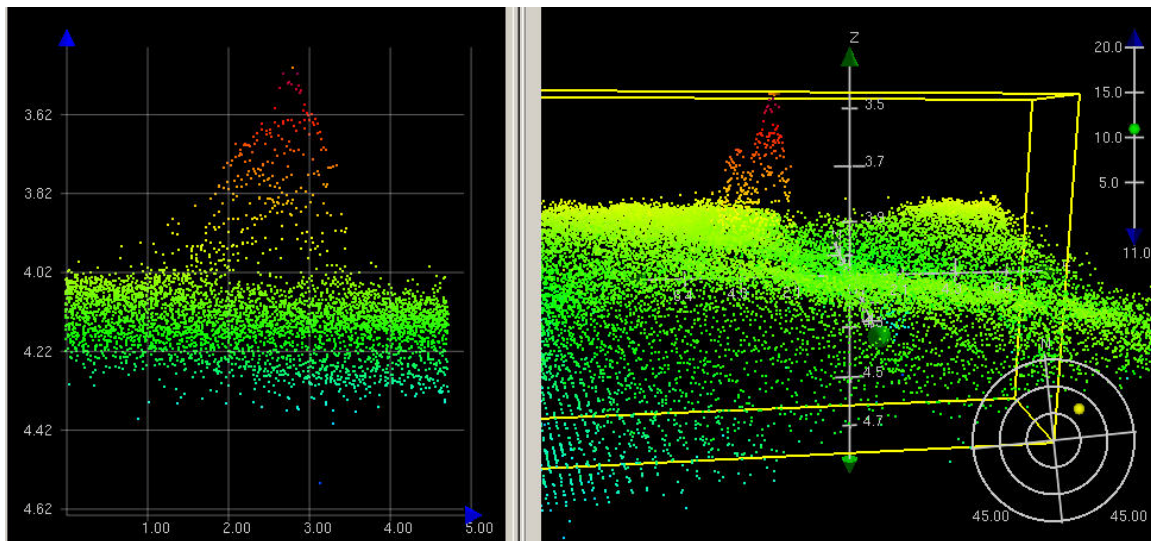
Corrected through LNM Nov. 19/02

Scale 1:10,000

Uncharted Features

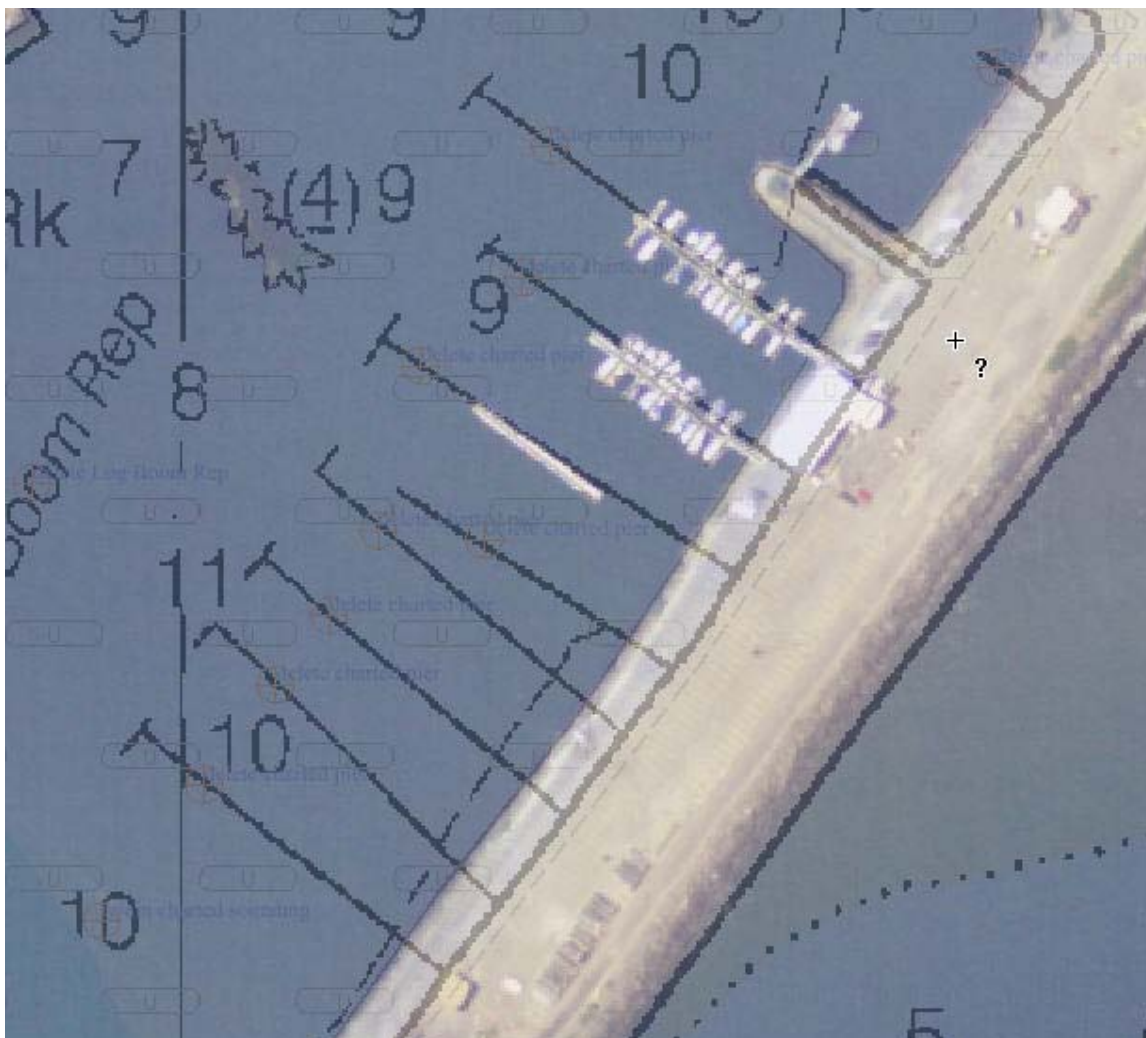
The following were identified during office processing:

1) Near the Coast Guard station in Crescent City Harbor, in Latitude $41^{\circ}44'31.971''\text{N}$, Longitude $124^{\circ}11'06.184\text{W}$, it is recommended to chart a dangerous Obstruction with a depth of 11 ft. This obstruction appears to be a sunken buoy.



2) In the vicinity of Latitude $41^{\circ}44'36.611''\text{N}$, Longitude $124^{\circ}10'55.778\text{W}$, there are charted eight finger piers and a Log Boom Rep note on the chart. Per a conversation with Richard Young, harbormaster for Crescent City, on September 25, 2009, the charted piers can be deleted and new piers charted as represented in the H-Cell. The eight finger piers have not been in place for many years. As detailed in the H-Cell, chart two piers

and add the note piers are temporary between May and October. Also per the same telephone conversation the charted Log Boom Rep can be deleted from the chart as there has not been a Log Boom in place in the harbor area for many years.



3) In the vicinity of Latitude $41^{\circ}45'09.84''N$, Longitude $124^{\circ}11'30.66W$, the charted shoreline around Elk Creek is out of date. Based on the OrthoImagery, National Agriculture Imagery Program (NAIP) Orthoimagery for Zone 10 California State Quarter Quadrangle CRESCENT CITY, SE and I.D. # n_4112415_se_10_1_20050629.tif, publication date 09-01-2006, Elk Creek and US Highway 101 shoreline, as well as the existing shoreline around Crescent City Harbor, all need to be updated. The following image shows the existing shoreline of Elk Creek from the OrthoImagery with the chart 18603 in the background:



Hydrography

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section “D” and Appendices 1 & 2 of the Descriptive Report.

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 File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

Bryan Chauveau

Bryan Chauveau
Physical Scientist
Verification of Data
Evaluation Report

H11446 COMPILATION LOG

Registry No.	F00562
Project No.	S-M917-NRT6-08
Field Unit	NOAA SURVEY VESSEL S3003, NRT-6
Compilation	Bryan Chauveau
Largest Scale Chart	<u>18603 (16th Edition, Dec./02)</u> Corrected through NM Nov. 30/02 Corrected through LNM Nov. 19/02 Scale 1:10,000
Chart Scale	1:10,000
Survey Scale	1:5,000
Date Of Survey	20081123

Components	File Names
<i>Contour Layer</i>	F00562_Contours
<i>Survey Scale Soundings</i>	F00562_SS_Soundings.hob
<i>Chart Scale Soundings</i>	F00562_CS_Soundings.hob
<i>Feature Layer</i>	F00562_DepAre.hob F00562_Rocks.hob F00562_Obstrns.hob F00562_Seabed_Areas.hob F00562_Coastline.hob F00562_Shoreline_Construction.hob
<i>Meta-Objects Layer</i>	F00562_M_Covr.hob F00562_M_Qual.hob
<i>Blue Notes</i>	F00562_BlueNotes.hob

META-OBJECTS:

M_COVR attributes

Acronym	Value
CATCOV	1 – coverage available
SORDAT	20081123
SORIND	US,US,survy,F00562

M_QUAL attributes

Acronym	Value
CATZOC	6
INFORM	F00562,NOAA Survey boat S3003
POSACC	10
SORDAT	20081123
SORIND	US,US,survy,F00562
SUREND	20081118
SURSTA	20081123

Final Grids Listing –
F00562_1m_Cube_Final.hns, F00562_1m_Cube_Final.xml

APPROVAL SHEET
F00562

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof 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 NOS requirements except where noted in the Evaluation Report.

Bryan Chauveau
Physical Scientist,
Atlantic Hydrographic Branch

All final products have undergone a comprehensive review as per the Atlantic Hydrographic Branch Processing Manual and are verified to be accurate and complete except where noted in the Evaluation Report.

I have reviewed the Base Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Approved:

LCDR Richard Brennan, NOAA
Chief, Atlantic Hydrographic Branch