

H11737

<p>NOAA FORM 76-35A</p> <p>U.S. DEPARTMENT OF COMMERCE          NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION          NATIONAL OCEAN SURVEY</p> <p><b>DESCRIPTIVE REPORT</b></p>	
<i>Type of Survey:</i>	<b>Navigable Area</b>
<i>Registry Number:</i>	<b>H11737</b>
<p><b>LOCALITY</b></p> <p><i>State:</i> <b>Massachusetts</b></p> <p><i>General Locality:</i> <b>Boston Harbor</b></p> <p><i>Sub-locality:</i> <b>President Roads</b></p>	
<p><b>2007</b></p> <p>CHIEF OF PARTY  <b>LT(jg) Matthew Jaskoski, NOAA</b></p>	
DATE	LIBRARY & ARCHIVES

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:  <p style="text-align: center; font-size: 1.2em;"><b>H11737</b></p>	
<p style="font-size: 1.2em; margin: 0;"><b>HYDROGRAPHIC TITLE SHEET</b></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.			
State:	<p style="margin: 0;"><b>Massachusetts</b></p>		
General Locality:	<p style="margin: 0;"><b>Boston Harbor</b></p>		
Sub-Locality:	<p style="margin: 0;"><b>President Roads</b></p>		
Scale:	<p style="margin: 0;"><b>1:5,000</b></p>	Date of Survey:	<p style="margin: 0;"><b>06/12/07 to 09/14/07</b></p>
Instructions Dated:	<p style="margin: 0;"><b>07/11/07</b></p>	Project Number:	<p style="margin: 0;"><b>OPR-A397-NRT5-07</b></p>
Change No.1 Dated:	<p style="margin: 0;"><b>N/A</b></p>		
Change No.2 Dated:	<p style="margin: 0;"><b>N/A</b></p>		
Vessel:	<p style="margin: 0;"><b>NOAA NRT-5, S3002</b></p>		
Chief of Party:	<p style="margin: 0;"><b>LT(jg) Matthew Jaskoski, NOAA</b></p>		
Surveyed by:	<p style="margin: 0;"><b>NOAA Navigation Response Team 5 Personnel</b></p>		
Soundings by:	<p style="margin: 0;"><b>Kongsberg Simrad EM 3000 multibeam sonar</b></p> <p style="margin: 0;"><b>Odom Echotrac CV/200</b></p>		
Graphic record checked by:	<p style="margin: 0;"><b>N/A</b></p>		
Protracted by:	<p style="margin: 0;"><b>N/A</b></p>	Automated Plot:	<p style="margin: 0;"><b>N/A</b></p>
Verification by:	<p style="margin: 0;"><b>Atlantic Hydrographic Branch Personnel</b></p>		
Soundings in:	<p style="margin: 0;"><b>Meters <i>Feet</i> at MLLW</b></p>		
Remarks:			
<p style="margin: 0;"><b>1) All Times are UTC.</b></p> <p style="margin: 0;"><b>2) This is a Basic Navigable Area Hydrographic Survey.</b></p> <p style="margin: 0;"><b>3) Projection is UTM Zone 19.</b></p> <p style="margin: 0;"><b><i>Red, bold, italic comments were made during office processing.</i></b></p>			

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**DESCRIPTIVE REPORT**  
to accompany  
HYDROGRAPHIC SURVEY H11737

Scale of Survey: 1:5,000  
Year of Survey: 2007  
NOAA Navigation Response Team 5  
LT(jg) Matthew Jaskoski, OIC

**A. AREA SURVEYED**

This hydrographic survey was conducted in accordance with Hydrographic Survey Letter Instructions for project OPR-A397-NRT5-07, H11737 Boston, MA<sup>1</sup>. The original instructions are dated July 11, 2007.

This Descriptive Report pertains to an area of approximately 2.16 SNM, of Boston Harbor from in the Deer Island in the east to Castle Island in the west. The assigned registry number for this sheet is H11737, as prescribed in the Letter Instructions.\*

The Port of Boston is the largest seaport in the New England area and is ranked 31<sup>st</sup> on the 175 ports list by the United States Army Corps of Engineers. For this reason, it is important to provide updated and accurate bathymetric surveys and object detection in Boston Harbor and its approaches, for safe navigation. This project is in support of updating the National Ocean Service (NOS) nautical charts.

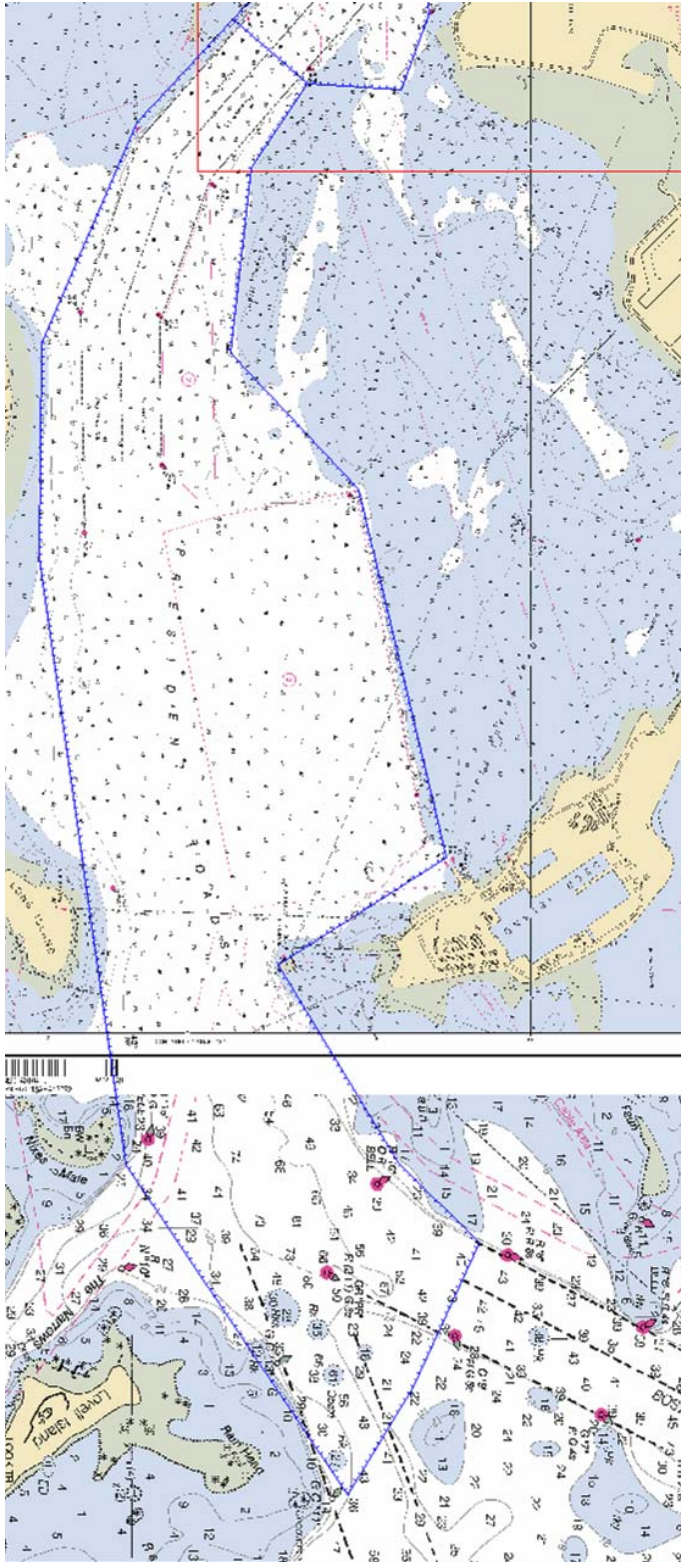
For complete survey limits, see figure A-1 on the following page.

Linear nautical miles of single beam only sounding lines - mainscheme only	64.6
Linear nautical miles of multibeam only sounding lines - mainscheme only	26.3
Linear nautical miles of side scan sonar only lines - mainscheme only	64.6
Linear nautical miles of any combination of the above techniques	155.5
Linear nautical miles of crosslines from single beam and multibeam combined	10.9
Linear nautical miles of developments other than mainscheme lines	0.9
Linear nautical miles of shoreline/nearshore investigation	0.0
Number of bottom samples collected	0
Number of items investigated that required additional time/effort in the field beyond the above survey operations	0.0
 Total square nautical miles	 3.52

Dates of acquisition: June 12, 2007 to September 14, 2007

\* *Filed with original field reports*

Figure A-1: Outline of survey area



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

### **B.1 EQUIPMENT**

Data were acquired by NOAA NRT-5 S3002. NOAA Survey Vessel S3002 is a 9.12-meter aluminum SeaArk outboard driven vessel with an average multibeam transducer draft of 1.3 meters.

NOAA S3002 acquired both bathymetry and imagery data. Side scan sonar data were acquired with a towed Klein 3000 sonar system. Bathymetry data were acquired with both an Odom Echotrac C/V 200 (VBES) and a Kongsberg Simrad EM 3000 multibeam echosounder (MBES). Positioning and attitude were determined with a TSS POS/MV 320 (version 4) GPS aided inertial navigation system

No unusual vessel configurations or problems were encountered. Refer to the 2007 Data Acquisition and Processing Report\* (DAPR) for detailed equipment and vessel configuration information.

### **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 linear contacts across the entire range of the side scan trace. No unusual problems were encountered.

200% SSS bottom coverage was collected for this survey project at 75 m range scale. A mosaic was created at 1 meter resolution for submission (Table B-2). ***Do not concur. A mosaic only existed within the fieldsheet. Field did not create an image file as required per 2007 NOS Hydrographic Specifications and Deliverables. AHB created the image files located at H:\Compilation\H11737\_A397-NRT5\AHB\_H11737\Fieldsheets\AHB\_H11737.***

#### **B.2.2 Multibeam Echosounder Quality Control**

Multibeam echosounder data were acquired at 100% coverage for SSS contact development, areas where the depth was 20m or greater, and areas deemed navigationally significant by the hydrographer. Data from DN 194, 197 and 207 showed evidence of attitude artifacts due to times of relatively heavy sea state. Sounding error due to this attitude artifact was generally between 0.1 to 0.3m and was within IHO order 1 allowable sounding error. Portions of Line 010\_1242, DN 194 exhibited significant sounding error, portions of the line were rejected from the dataset. Other than the above, there were no faults with the MBES system which affected

data integrity. For detailed discussion of MBES system calibrations, data acquisition, and data processing refer to this project’s DAPR\* .

**B.2.3 Total Propagated Error**

Total Propagated Error (TPE) parameters for sound speed and tide data for H11737 are shown in table B-1. Total tide error was provided by CO-Ops as 0.13, the 1-σ value applied in post-processing was 0.065. Sound speed TPE values were used in accordance with HSTP guidelines regarding frequency of surface and water column sound speed measurements.

Table B-1. Total Propagated Error parameters.

<b>Total Propagated Error Values</b>			
Tide Values		Sound Speed Values	
Measured	Zoning	Measured	Surface
0.00	0.065	4.0	0.2

**B.2.4 Fieldsheets and Navigation Surfaces**

A Caris HIPS CUBE (Combined Uncertainty Bathymetry Estimator) surface was created using the shallow CUBE parameters file. An Uncertainty Weighted surface was created for VBES data. Surfaces were created at 5m resolution for VBES and 0.75m resolution for MBES data. Based on Caris generated QC reports (see sec B.2.5) beams 1-2, and 126-127 were filtered out of the processed data, and are not included in the base surfaces. Finalized CUBE surface weighted grid is included in the digital preliminary smooth sheet. Table B-2 lists all surfaces submitted with this survey.

**B.2.5 Single Beam Quality Control**

There were no unusual events associated with the collection of the Single Beam data for this project.

Refer to this project’s DAPR\* for detailed discussion of VBES system calibrations, data acquisition, and data processing.

\* Filed with original field records and submitted with final HSD deliverables

Table B-2: H11737 bathymetry surface, and Side Scan mosaic resolutions.

<b>H11737 Bathymetry surfaces and SSS mosaic</b>			
Fieldsheet	Surface/Mosaic Name	Grid Type	Resolution
H11737	H11737_MBES_CUBE_75cm	CUBE	0.75m
H11737	H11737_MBES_CUBE_75cm_Final	CUBE	0.75m
H11737	H11737_VBES_BASE_5m	Uncertainty Weighted	5.00m
H11737	H11737_VBES_BASE_5m_Final	Uncertainty Weighted	5.00m
H11737	H11737_1m	SSS Mosaic	1.00m

### B.2.6 Crosslines

Approximately 10.9 linear NM of crosslines were acquired, this is 12% of the combined MBES and VBES mainscheme bathymetry linear NM. A total of 5.1 linear NM of MBES crosslines were run; this was ~~approximately 19%~~ **19.4%** of the total linear NM of MBES mainscheme lines run. A visual examination of approximately 10% of crossline-mainscheme common areas showed general agreement between crosslines and mainscheme lines to within 1-2 feet. With the exception of the outermost, rejected beams (1-3\* and 126-127) all beams met 90% order oneness based on the Caris generated quality control report (fig B-1) outer beams were filtered from the dataset. Please refer to the separates section of this report for Caris generated QC tables. A total of 5.8 linear NM of VBES crosslines were run; this was ~~approximately 9%~~ of the total linear NM of VBES mainscheme lines run. Visual comparison junction areas showed general agreement to within 1-2 feet between crosslines and mainscheme VBES lines. For a list of all crosslines acquired for this project, tabulated by DN and line file name, please refer to the processing logs <sup>\*\*</sup> located in the separates <sup>\*\*</sup> section of this report. ***\*Do not concur. QC history provided by field includes beam 3 in the report. QC history also reports that all accepted beams fall within 98% of IHO order 1 specifications.***

### B.2.7 Junctions

Survey H11737 junctions with both contemporary survey H11736, and prior surveys H10990 and H10991. Visual examination of all junction areas showed agreement between bathymetry data to within 1-2 feet. ***Do not concur. See Evaluation Report.***

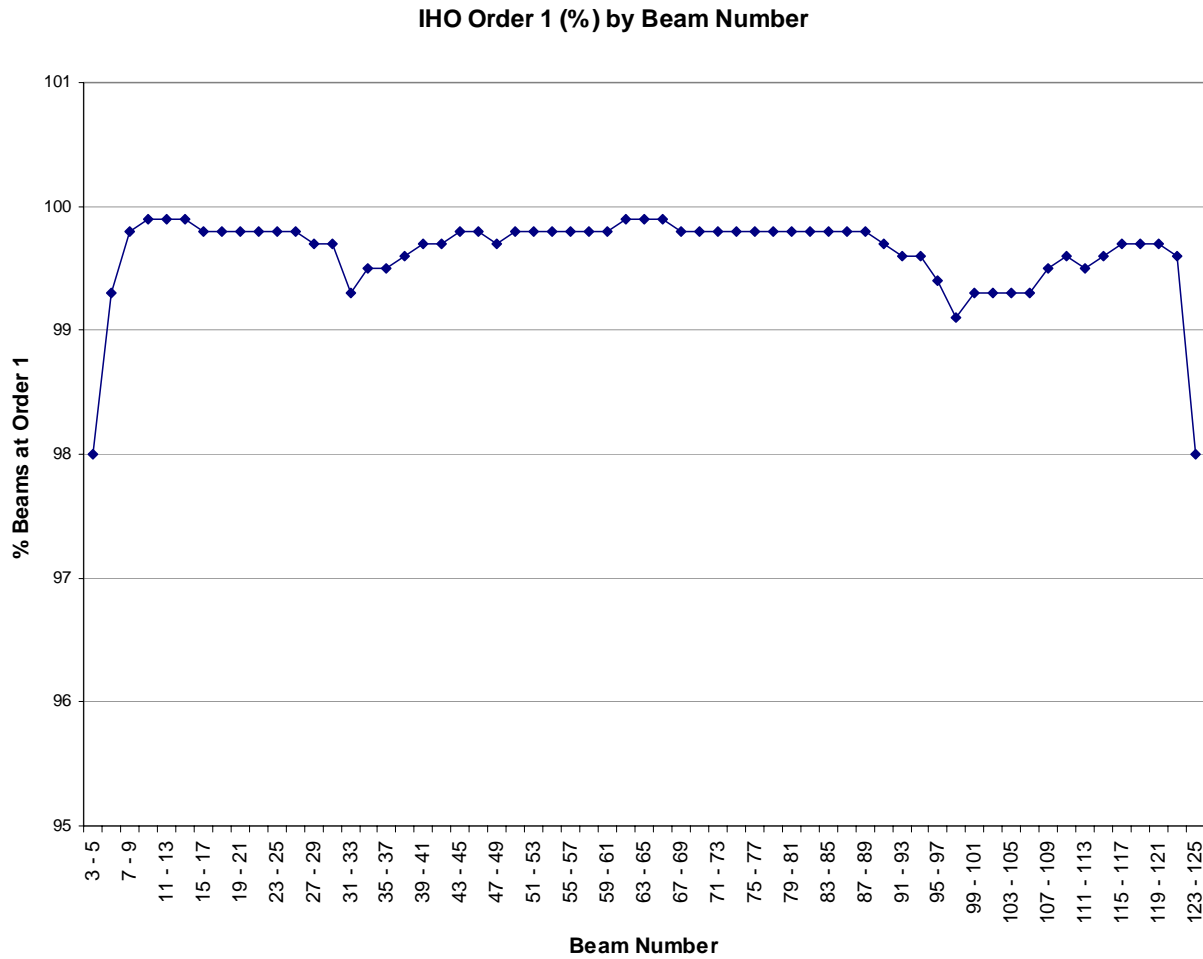
## B.3 CORRECTIONS TO ECHO SOUNDING

All methods or instruments used were as described in the project DAPR <sup>\*\*\*</sup>. All sound velocity casts are included in the digital preliminary smooth sheet.

***\*\* Filed with original field reports***

***\*\*\* Filed with original field reports and submitted with final HSD deliverables***

Figure B-1: Caris QC report, IHO order oneness v Beam Number rejected beams 1-2, and 126-127 not included.



## C. VERTICAL AND HORIZONTAL CONTROL

### 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 Boston (844-3970) served as datum control for the survey area. No installation or leveling was performed by NRT-5 personnel.

A Request for Approved Tides was sent to N/OPS1 on September 24<sup>21</sup>, 2007 (Appendix ~~III~~ **IV**\*). Verified tides from the N/OPS1 CO-OPS website were downloaded and applied to all sounding data. *Concur with clarification. CO-OPS approved final water levels indicate no difference from what field applied. Reapplication of final approved water level correction was not required.*

### C.2 HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 19.

Sounding positional control was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon stations. The DGPS beacon used for this survey was Acushnet, MA. No horizontal control stations were established for this survey.

Horizontal dilution of precision (HDOP) was monitored during acquisition, and did not exceed 4.00. Adequate satellite coverage was maintained throughout the survey period. *Concur.*

*\* Appended to this report*

## D. RESULTS AND RECOMMENDATIONS

### D.1 CHART COMPARISON

The charts affected by this survey are:

<i>Chart Number</i>	<i>Edition</i>	<i>Edition Date</i>	<i>Raster (.kap) Date</i>
13272	49th	2004-October	6/22/2007
13270	62nd	2006-June	6/22/2007
13267	34th	2007-May	6/22/2007

<i>ENC Cell Name</i>	<i>Edition</i>	<i>Update Application Date</i>	<i>Issue Date</i>
US5MA11M	7th	2007-04-04	2007-06-19
US5MA12M	5th	2006-11-28	2007-06-04

#### D.1.1 General Agreement with Charted soundings

Sounding data generally agreed with charted depths to within 1-2 feet, significant differences from charted depths are addressed in Appendixes ~~x~~ II\* *Concur with clarification. See the Evaluation Report and Pre-Compile Log.*

#### D.1.2 AWOIS Items and Significant Contacts

There were 2 AWOIS items within the survey limits, neither of which were full investigation. These items are addresses in Appendix II\* of this report. *Concur.*

#### D.1.3 Dangers to Navigation

There were no DToNs submitted for H11737. See Appendix I. *Concur with clarification. No documents were submitted.*

\* *Appended to this report*



#### **D.1.4 Charted Features**

Hydrographer recommended changes to charted items are listed in Appendix II\* of this report as well as in the digital preliminary smooth sheet. All charted items not specifically addressed in Appendix II\* are recommended to be retained as charted by the hydrographer. *See also the Evaluation Report.*

#### **D.1.5 Charting Recommendations**

Hydrographer recommendations for discreet items are included in Appendix II\* of this report as well as in the *PYDRO* digital preliminary smooth sheet. Survey H11737 is complete and adequate to supersede charted soundings in their common areas. *Concur with clarifications as noted in section D.1.1, the Evaluation Report.*

### **D.2 ADDITIONAL RESULTS**

#### **D.2.1 Aids to Navigation**

No AToNs located within the survey limits were found to be significantly off station. The hydrographer has no recommended changes to the charted AToN. See Appendix V, section V.3. *Appendix V does not exist in field records.*

#### **D.2.2 Bridges and Overhead Cables**

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

#### **D.2.3 Submarine Cables and Pipelines**

There are three charted sewer pipelines and one submarine cable area located on H11737 in the area of President Roads between Deer Island and Nixes Mate. No exposed cables were positioned during this survey, nor were any images of these items acquired on SSS. One sewer line outfall was found to be positioned incorrectly on the chart this item is addressed in Appendix II\*. *Concur with clarification. See ER.*

\* *Appended to this report*

## **E. APPROVAL SHEET**

**OPR-A397  
Boston Harbor  
Massachusetts**

**President Roads  
Survey Registry No. H11737**

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

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

OPR-A397-NRT5-07 horizontal and vertical control report (submitted with this report)  
2007 Data Acquisition and Processing Report (submitted with this report)

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

Respectfully,

---

LT(jg) Matthew Jaskoski, NOAA  
OIC NRT-5

**APPENDIX I**  
**DANGERS TO NAVIGATION REPORT**

There were no DToNs submitted for H11737.

**APPENDIX II**  
**SURVEY FEATURES REPORT**

# H11737-Charted Items

**Registry Number:** H11737  
**State:** Massachusetts  
**Locality:** Boston Harbor  
**Sub-locality:** President Roads  
**Project Number:** OPR-A397-NRT5-07  
**Survey Dates:** 07/12/2007 - 08/01/2008

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13272	49th	10/01/2004	1:10,000 (13272_1)	USCG LNM: 04/29/2008 (04/29/2008) CHS NTM: None (02/29/2008) NGA NTM: None (05/03/2008)
13270	62nd	06/01/2006	1:25,000 (13270_1)	USCG LNM: 04/29/2008 (04/29/2008) CHS NTM: None (02/29/2008) NGA NTM: 07/08/2000 (05/03/2008)
13274	26th	04/01/2005	1:40,000 (13274_5)	[L]NTM: ?
13267	32nd	12/01/2004	1:80,000 (13267_1)	[L]NTM: ?
13260	39th	06/01/2003	1:378,838 (13260_1)	[L]NTM: ?
13200	34th	12/01/2005	1:400,000 (13200_1)	[L]NTM: ?
13009	32nd	07/01/2006	1:500,000 (13009_1)	[L]NTM: ?
13006	33rd	04/01/2006	1:675,000 (13006_1)	[L]NTM: ?
13003	48th	10/01/2004	1:1,200,000 (13003_1)	[L]NTM: ?

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

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	charted Rks, 28-ft LD	Rock	8.99 m	42° 20' 23.4" N	070° 56' 05.2" W	---
1.2	charted 35' Rock	Rock	10.74 m	42° 20' 28.0" N	070° 56' 02.5" W	---
1.3	charted 27' Rock	Rock	8.43 m	42° 20' 30.7" N	070° 55' 35.7" W	---
1.4	charted 37' Rk	Rock	11.47 m	42° 20' 05.4" N	070° 59' 53.9" W	---
1.5	charted Rks, 30-ft LD	Rock	9.63 m	42° 20' 21.5" N	070° 56' 08.2" W	---
1.6	charted Sewer outfall	Shoal	13.84 m	42° 20' 20.6" N	070° 57' 19.0" W	---

1.7	charted 12' Rock	Rock	3.82 m	42° 20' 18.9" N	070° 55' 57.9" W	---
1.8	charted 30' Rock	Rock	9.88 m	42° 19' 53.0" N	070° 58' 12.9" W	---
1.9	Y N "E"	SSS	[None]	42° 20' 11.9" N	070° 58' 47.8" W	---
1.10	charted sewer	Pipe	3.10 m	42° 20' 25.3" N	070° 57' 08.6" W	---
1.11	charted visible wreck PA	GP	[None]	42° 20' 14.4" N	070° 59' 21.0" W	---

**1 - DR\_Charted**

## 1.1) charted Rks, 28-ft LD

### Survey Summary

**Survey Position:** 42° 20' 23.4" N, 070° 56' 05.2" W  
**Least Depth:** 8.99 m (= 29.51 ft = 4.918 fm = 4 fm 5.51 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.965$  m ; **TVU (TPEv)**  $\pm 0.191$  m  
**Timestamp:** 2007-194.13:03:37.720 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 012\_1301  
**Profile/Beam:** 760/46  
**Charts Affected:** 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The area was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The contact is a rock within a charted rocky area, LD in agreement with charted depths.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/012_1301	760/46	0.00	000.0	Primary
h11737/3002sss500k/2007-163/sonar_data070612134800	0009	3.77	244.7	Secondary
ChartGPs - ENC US5MA12M	Danger 35	6.66	277.4	Secondary
h11737/3002sss500k/2007-163/sonar_data070612122300	0012	11.14	234.8	Secondary
h11737/3002sss500k/2007-163/sonar_data070612122300	0002	11.48	223.0	Secondary

### Hydrographer Recommendations

Retain as charted.

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

29ft (13270\_1, 13274\_5, 13267\_1)

4  $\frac{3}{4}$ fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914



SORIND - US,US,Nsurf,H11737

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

VALSOU - 8.994 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Do not concur. Delete the charted 28-ft rock located in Lat 42-20-23.54N, Lon 070-56-04.72W. Add 29-ft rock to the chart at the surveyed location at Lat 42-20-23.438, Lon 070-56-05.173.

### Feature Images

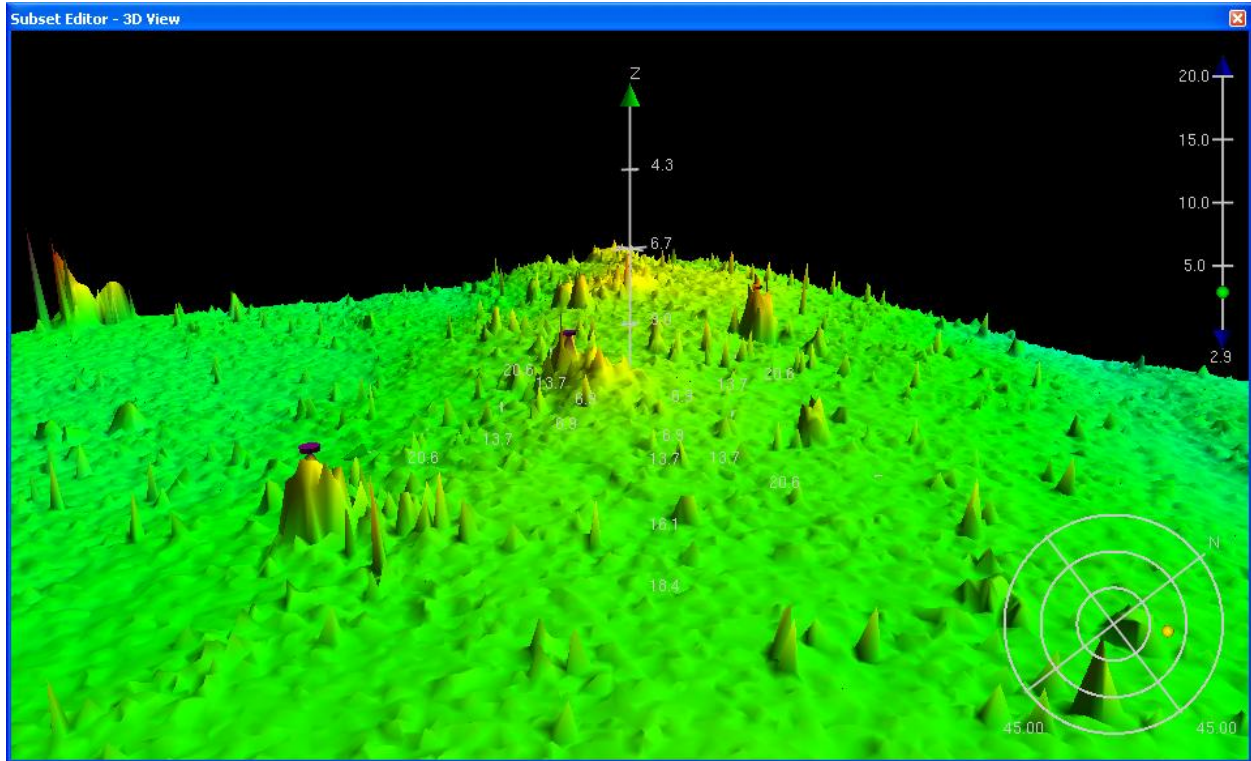


Figure 1.1.1



*Figure 1.1.2*

## 1.2) charted 35' Rock

### Survey Summary

**Survey Position:** 42° 20' 28.0" N, 070° 56' 02.5" W  
**Least Depth:** 10.74 m (= 35.23 ft = 5.872 fm = 5 fm 5.23 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.966$  m ; **TVU (TPEv)**  $\pm 0.196$  m  
**Timestamp:** 2007-194.13:35:11.791 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 016\_1332  
**Profile/Beam:** 838/43  
**Charts Affected:** 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The contact is a rock within the charted OBSTN circle, LD in agreement with charted depth.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/016_1332	838/43	0.00	000.0	Primary
ChartGPs - ENC US5MA12M	Danger 34	0.70	041.8	Secondary (grouped)
h11737/3002sss500k/2007-163/sonar_data070612141900	0005	1.77	100.9	Secondary
h11737/3002sss500k/2007-163/sonar_data070612134800	0007	3.35	312.3	Secondary
h11737/3002sss500k/2007-163/sonar_data070612134800	0005	17.45	201.4	Secondary

### Hydrographer Recommendations

Retain as charted.

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

35ft (13270\_1, 13274\_5, 13267\_1)

5  $\frac{3}{4}$ fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914

SORIND - US,US,Nsurf,H11737

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

VALSOU - 10.739 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur with clarification. Chart dangerous 35-ft rock at the current survey position.

### Feature Images

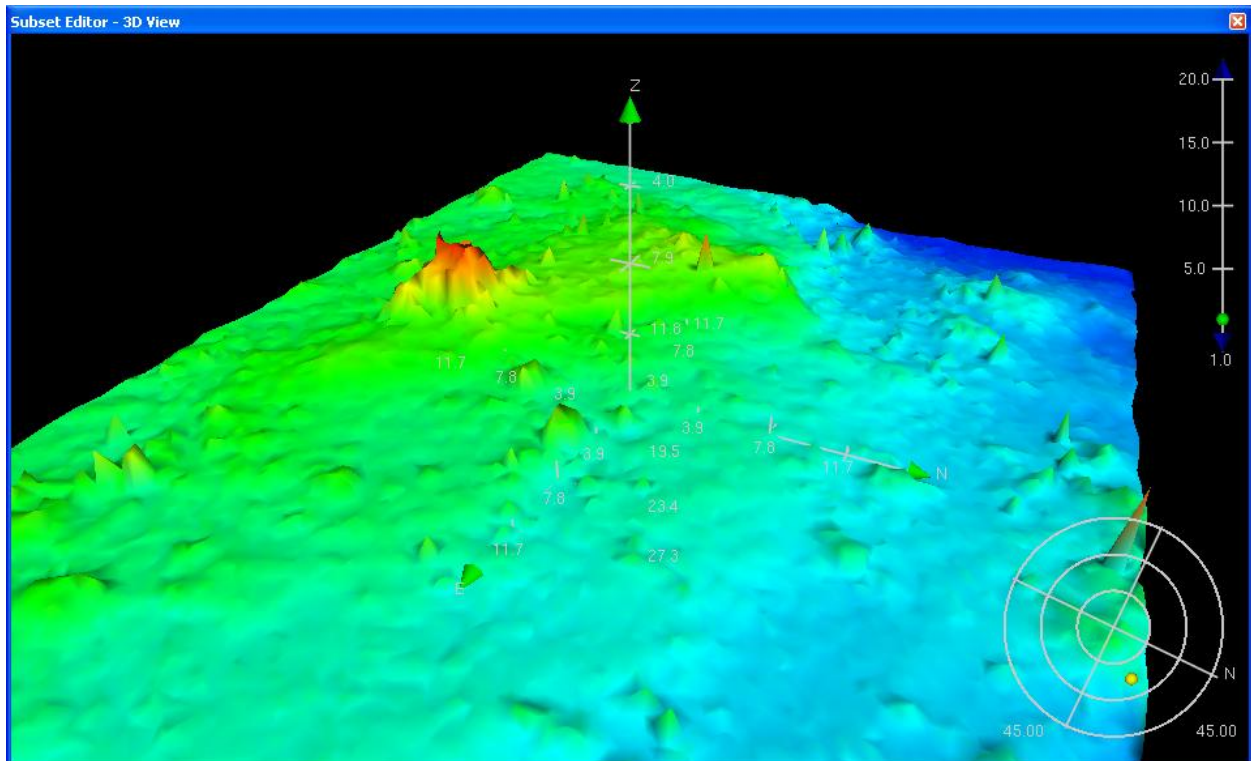
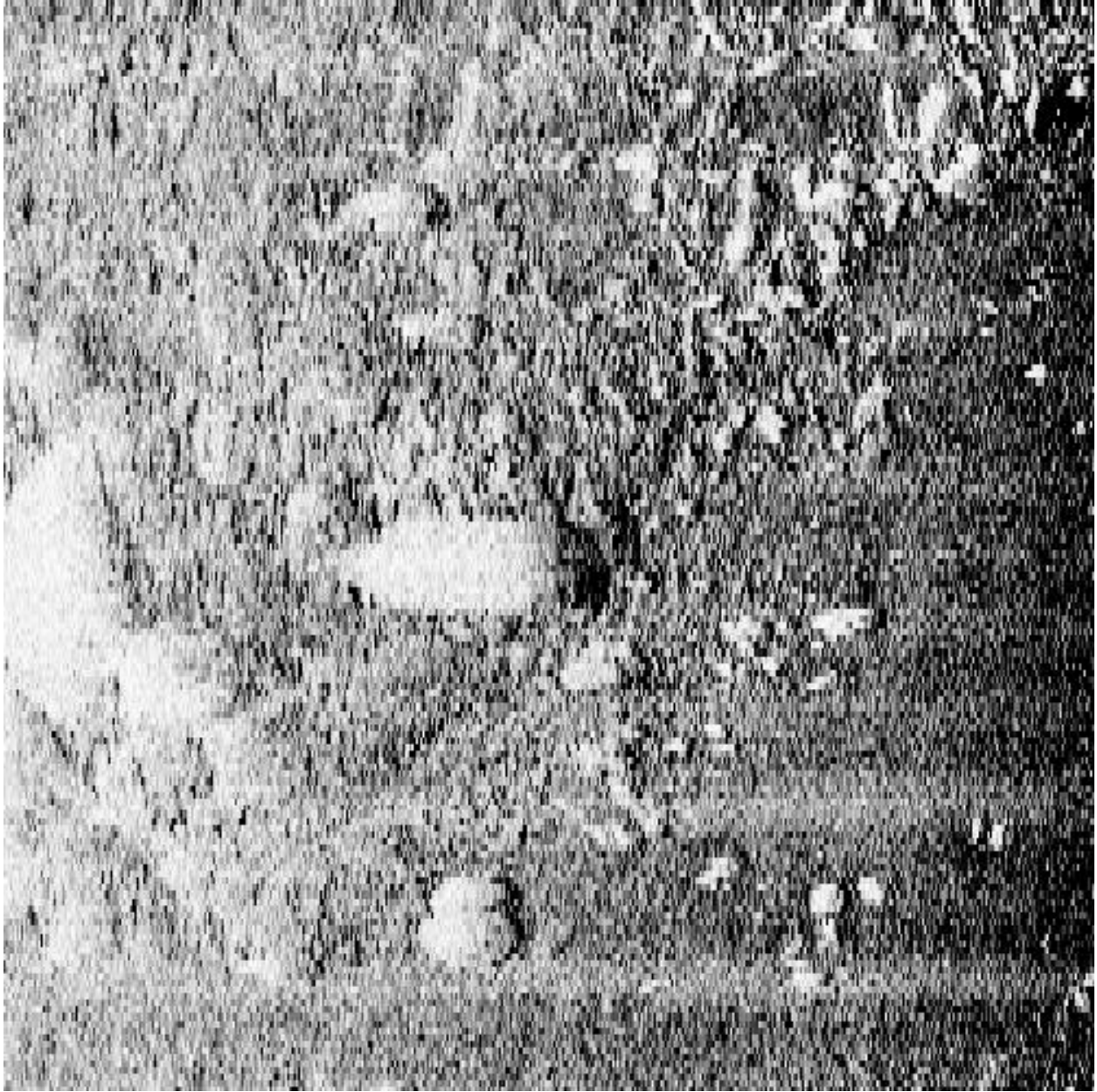


Figure 1.2.1



*Figure 1.2.2*



### 1.3) charted 27' Rock

#### Survey Summary

**Survey Position:** 42° 20' 30.7" N, 070° 55' 35.7" W  
**Least Depth:** 8.43 m (= 27.66 ft = 4.610 fm = 4 fm 3.66 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.967$  m ; **TVU (TPEv)**  $\pm 0.205$  m  
**Timestamp:** 2007-194.13:58:09.224 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 089\_1357  
**Profile/Beam:** 264/19  
**Charts Affected:** 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The contact is a charted rock, LD in agreement with charted depths.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/089_1357	264/19	0.00	000.0	Primary
h11737/3002sss500k/2007-163/sonar_data070612131700	0008	1.30	311.8	Secondary
ChartGPs - ENC US5MA12M	Danger 46	3.92	280.7	Secondary (grouped)
h11737/3002sss500k/2007-163/sonar_data070612131700	0001	9.52	049.8	Secondary (grouped)
h11737/3002sss500k/2007-163/sonar_data070612130500	0001	9.95	230.1	Secondary

#### Hydrographer Recommendations

Retain as charted.

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

27ft (13270\_1, 13274\_5, 13267\_1)

4 ½fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

#### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914



SORIND - US,US,Nsurf,H11737

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

VALSOU - 8.430 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur with clarification. Chart 27-ft rock at the current surveyed location.

### Feature Images

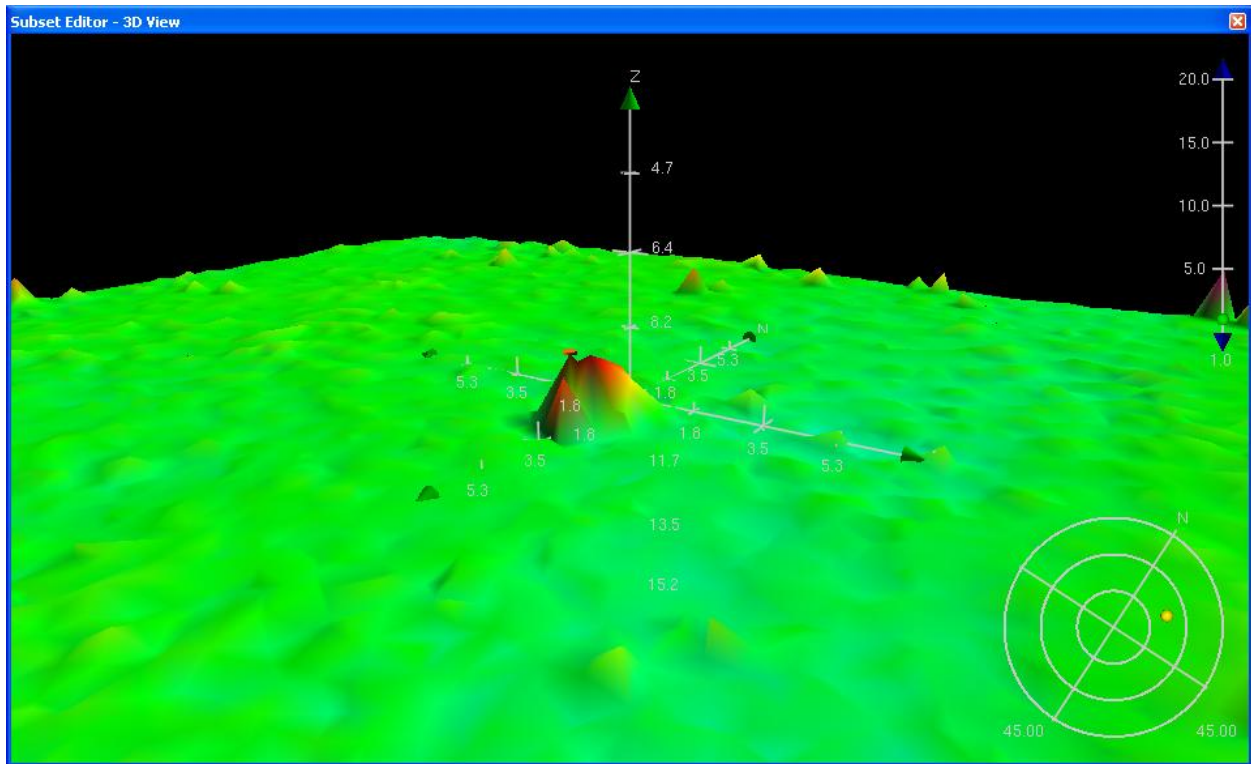
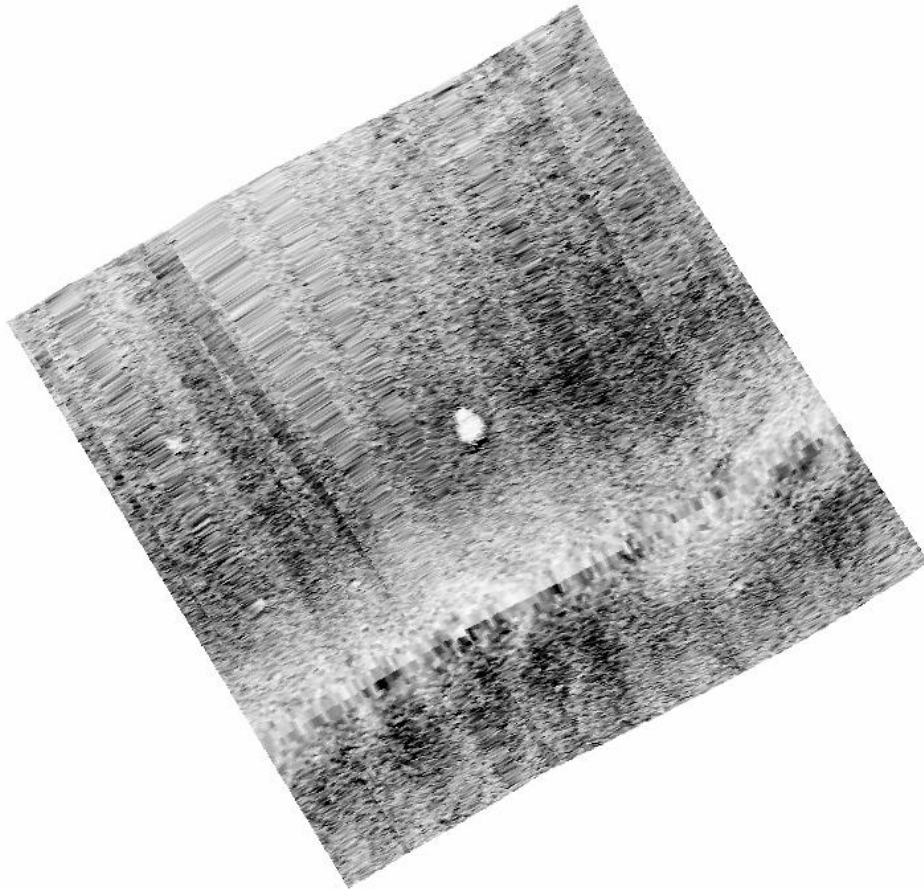


Figure 1.3.1



*Figure 1.3.2*

## 1.4) charted 37' Rk

### Survey Summary

**Survey Position:** 42° 20' 05.4" N, 070° 59' 53.9" W  
**Least Depth:** 11.47 m (= 37.62 ft = 6.270 fm = 6 fm 1.62 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.975$  m ; **TVU (TPEv)**  $\pm 0.273$  m  
**Timestamp:** 2007-197.14:39:50.208 (07/16/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-197 / 036\_1432  
**Profile/Beam:** 3700/121  
**Charts Affected:** 13272\_1, 13270\_1, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The contact is a charted rock, LD deeper than charted depths.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-197/036_1432	3700/121	0.00	000.0	Primary
h11737/3002sss500k/2007-165/sonar_data070614135900	0002	6.03	325.0	Secondary
ChartGPs - ENC US5MA11M	Danger 12	6.61	050.9	Secondary (grouped)
h11737/3002sss500k/2007-165/sonar_data070614140100	0002	21.11	091.1	Secondary
h11737/3002sss500k/2007-165/sonar_data070614133800	0001	28.65	060.1	Secondary

### Hydrographer Recommendations

Retain as charted.

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

37ft (13272\_1, 13270\_1, 13267\_1)

6 ¼fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914

SORIND - US,US,Nsurf,H11737

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

VALSOU - 11.466 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur with clarification. Revise charted 37-ft Rk to surveyed position and least depth.

### Feature Images

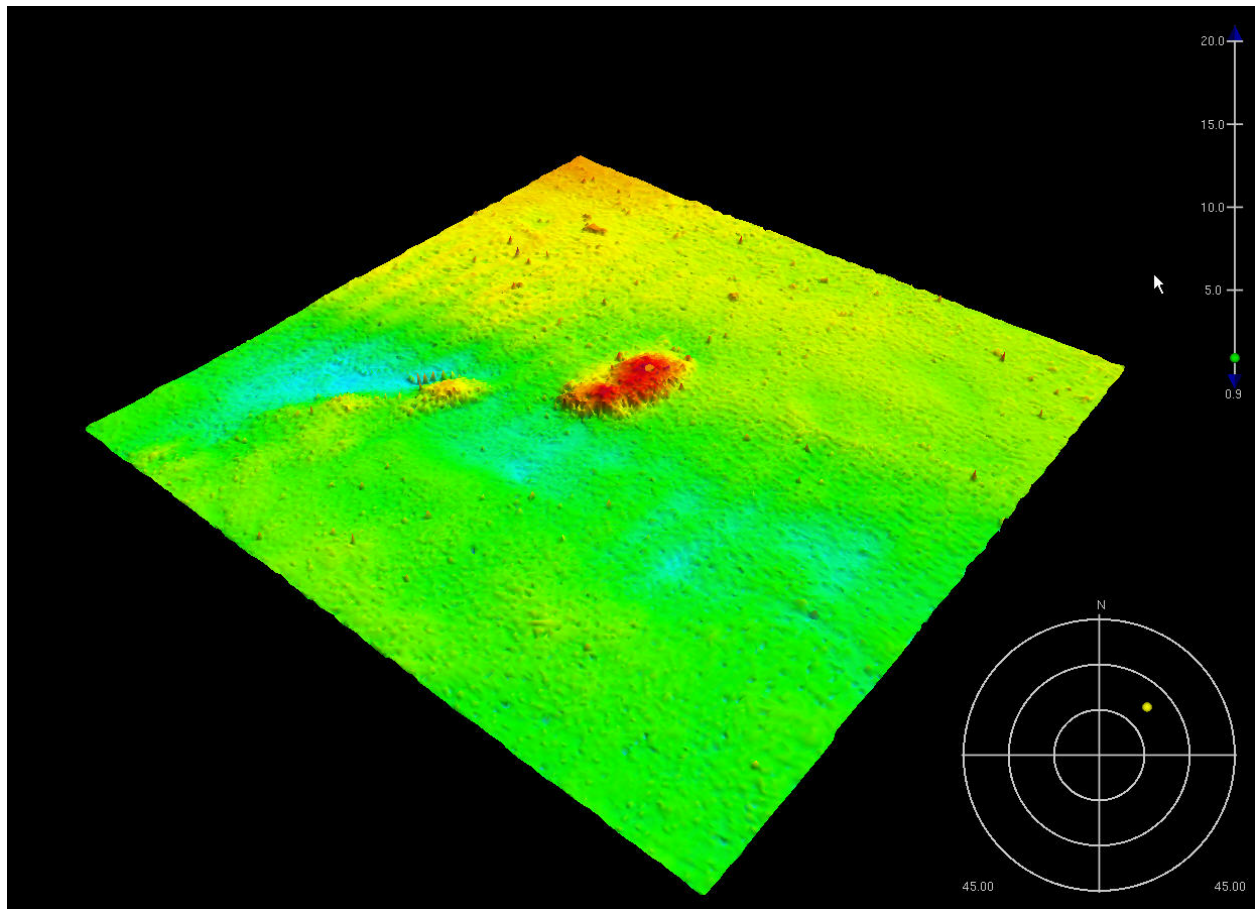
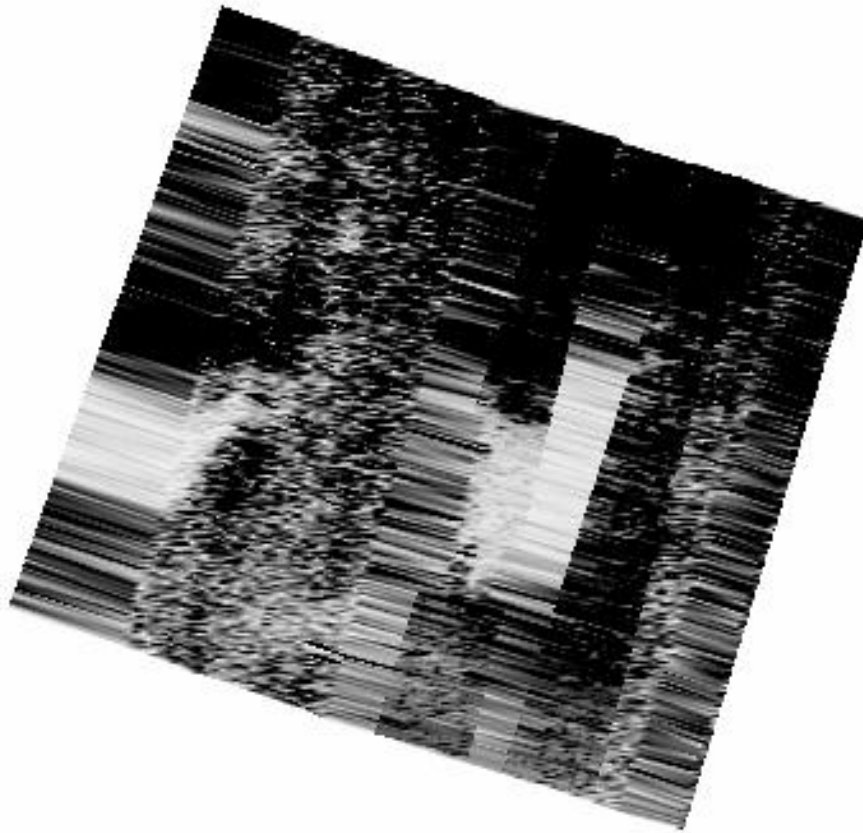


Figure 1.4.1



*Figure 1.4.2*

## 1.5) charted Rks, 30-ft LD

### Survey Summary

**Survey Position:** 42° 20' 21.5" N, 070° 56' 08.2" W  
**Least Depth:** 9.63 m (= 31.58 ft = 5.264 fm = 5 fm 1.58 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.965$  m ; **TVU (TPEv)**  $\pm 0.195$  m  
**Timestamp:** 2007-257.14:19:46.479 (09/14/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-257 / 001\_1417  
**Profile/Beam:** 897/30  
**Charts Affected:** 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The contact is a rock within a charted rocky area, LD in agreement with charted depths.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-257/001_1417	897/30	0.00	000.0	Primary
h11737/s3002_mbes/2007-194/012_1301	437/120	4.19	247.1	Secondary
ChartGPs - ENC US5MA12M	Danger 36	4.50	312.9	Secondary (grouped)
h11737/3002sss500k/2007-163/sonar_data070612122300	0018	5.69	268.8	Secondary

### Hydrographer Recommendations

Retain as charted

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

31ft (13270\_1, 13274\_5, 13267\_1)

5 ¼fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** SORDAT - 20070914  
 SORIND - US,US,Nsurf,H11737  
 TECSOU - 3:found by multi-beam



VALSOU - 9.626 m

WATLEV - 3:always under water/submerged

### **Office Notes**

Concur with clarification. Chart 31-ft rock at the current surveyed location. Retain "rks" notation as charted.

### Feature Images

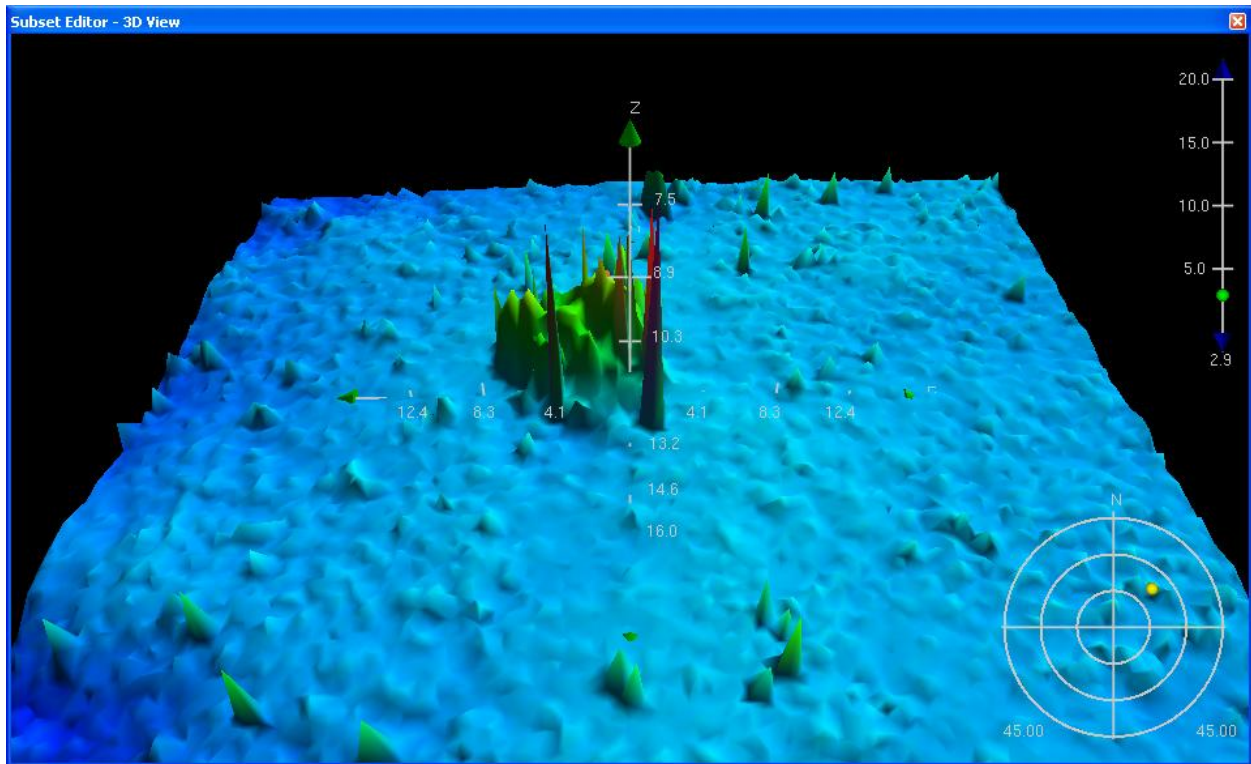
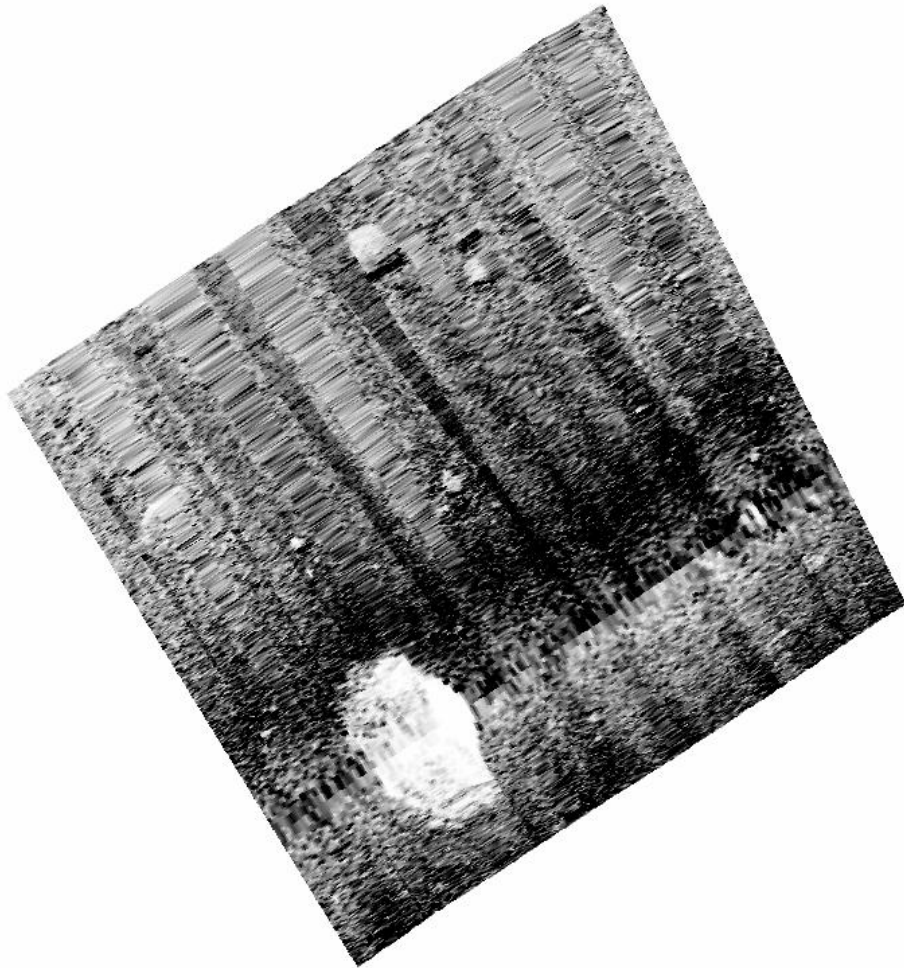


Figure 1.5.1



*Figure 1.5.2*

## 1.6) charted Sewer outfall

### Survey Summary

**Survey Position:** 42° 20' 20.6" N, 070° 57' 19.0" W  
**Least Depth:** 13.84 m (= 45.40 ft = 7.567 fm = 7 fm 3.40 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.973$  m ; **TVU (TPEv)**  $\pm 0.237$  m  
**Timestamp:** 2007-194.16:11:17.749 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 056\_1608  
**Profile/Beam:** 993/111  
**Charts Affected:** 13272\_1, 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The area was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The contact appears to be the outfall of a charted sewer pipeline.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/056_1608	993/111	0.00	000.0	Primary
h11737/3002sss500k/2007-166/sonar_data070615173500	0002	12.65	053.7	Secondary
h11737/3002sss500k/2007-163/sonar_data070612170600	0001	24.66	150.5	Secondary
h11737/3002sss500k/2007-163/sonar_data070612171500	0001	27.70	160.1	Secondary
ChartGPs - ENC US5MA11M	Danger 56	415.22	179.3	Secondary (grouped)

### Hydrographer Recommendations

The hydrographer recommends the pipeline be charted as surveyed, and a representative sounding be added.

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

45ft (13272\_1, 13270\_1, 13274\_5, 13267\_1)

7 ½fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

**Geo object 1:** Pipeline, submarine/on land (PIPSOL)  
**Attributes:** CATPIP - 4:sewer  
 OBJNAM - Outfall

SORDAT - 20070914

SORIND - US,US,Nsurf,H11737

## Office Notes

Outfall observed to be in charted location. Recommend to extend outfall limit as portrayed in the surface model and in the HSD H-Cell. Chart current sounding data. High resolution surface model indicates it is a rocky area covering the sewer pipe terminal end.

### Feature Images

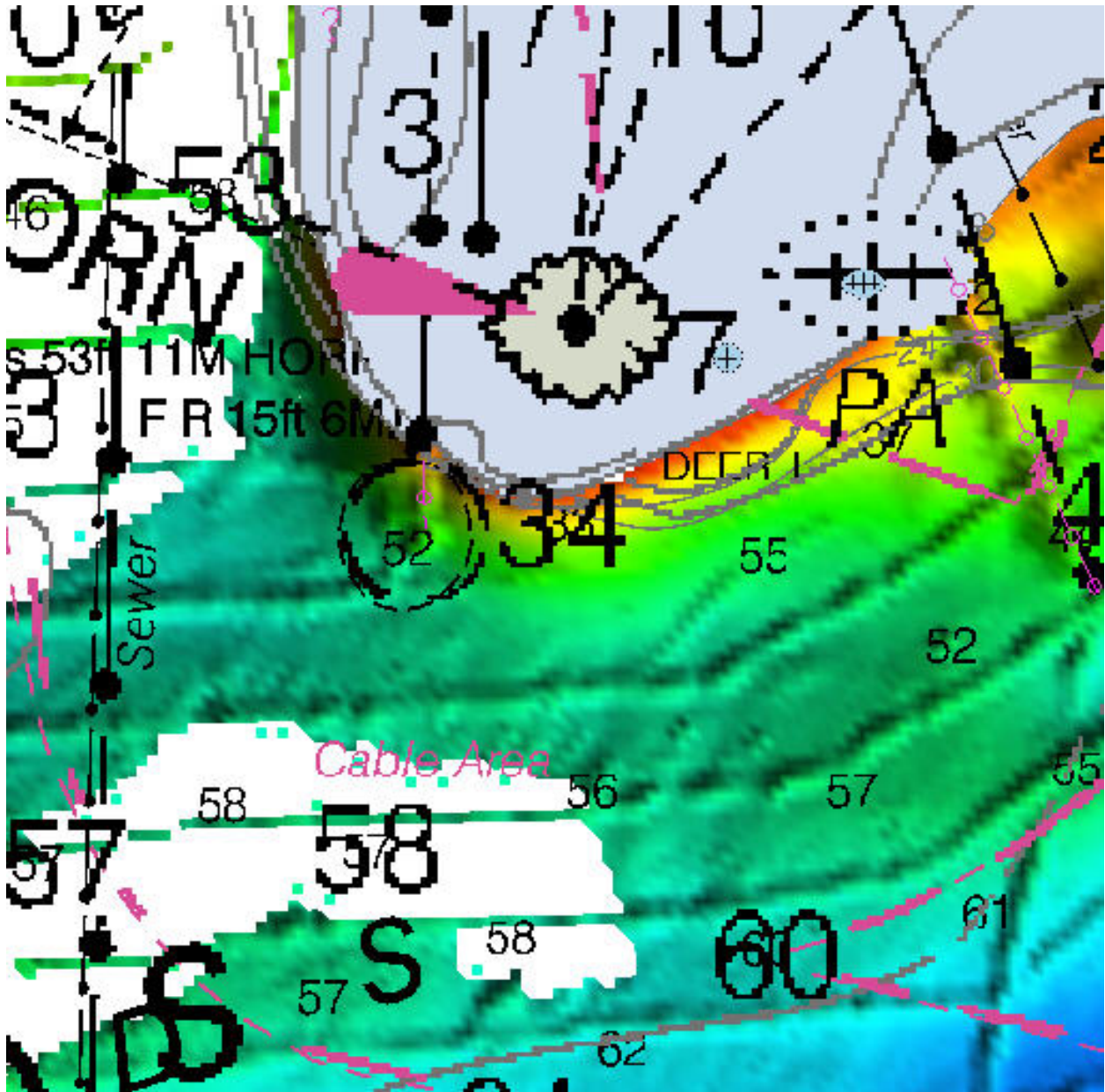


Figure 1.6.1



*Figure 1.6.2*

## 1.7) charted 12' Rock

### Survey Summary

**Survey Position:** 42° 20' 18.9" N, 070° 55' 57.9" W  
**Least Depth:** 3.82 m (= 12.53 ft = 2.089 fm = 2 fm 0.53 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.964$  m ; **TVU (TPEv)**  $\pm 0.193$  m  
**Timestamp:** 2007-194.14:52:15.688 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 003\_1450  
**Profile/Beam:** 1094/118  
**Charts Affected:** 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The object is a rock, LD in agreement with charted depth.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/003_1450	1094/118	0.00	000.0	Primary
h11737/3002sss500k/2007-163/sonar_data070612131700	0009	3.65	038.5	Secondary
ChartGPs - ENC US5MA12M	Danger 30	4.15	045.8	Secondary (grouped)

### Hydrographer Recommendations

Retain as charted.

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

12ft (13270\_1, 13274\_5, 13267\_1)

2fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914  
 SORIND - US,US,Nsurf,H11737  
 TECSOU - 3:found by multi-beam



VALSOU - 3.820 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## **Office Notes**

Concur with clarification. Chart 12-ft Rk to surveyed position.

### Feature Images

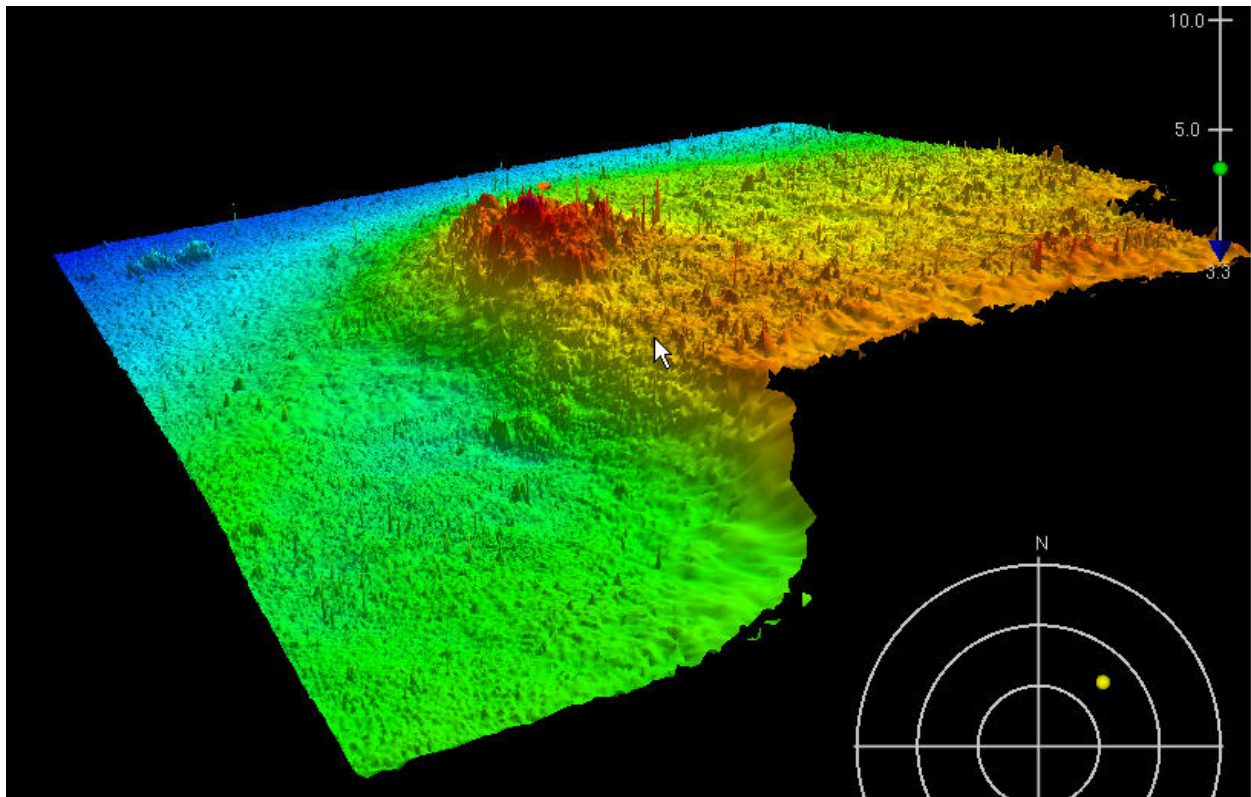
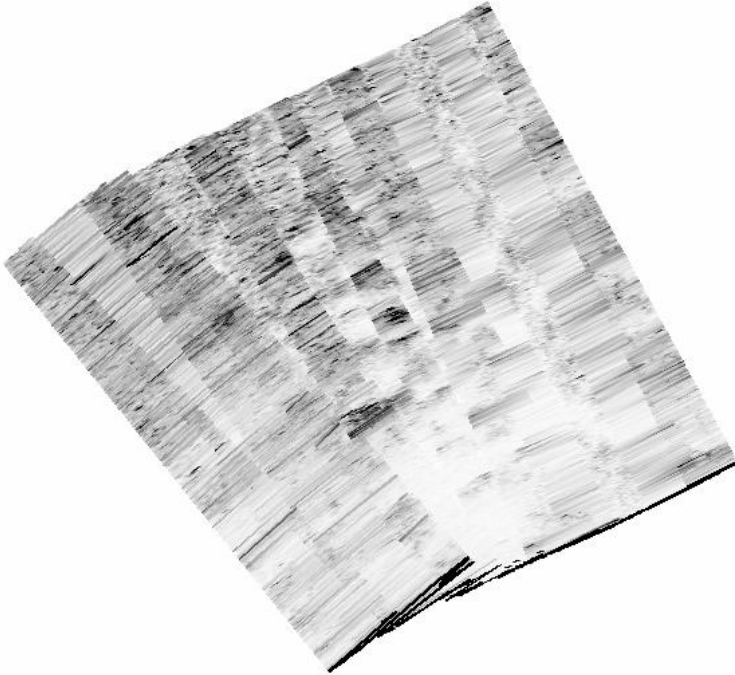


Figure 1.7.1



*Figure 1.7.2*

## 1.8) charted 30' Rock

### Survey Summary

**Survey Position:** 42° 19' 53.0" N, 070° 58' 12.9" W  
**Least Depth:** 9.88 m (= 32.41 ft = 5.402 fm = 5 fm 2.41 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.965$  m ; **TVU (TPEv)**  $\pm 0.192$  m  
**Timestamp:** 2007-193.20:44:18.625 (07/12/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-193 / 411\_2044  
**Profile/Beam:** 178/100  
**Charts Affected:** 13272\_1, 13270\_1, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The object is a rock LD deeper than charted sounding.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-193/411_2044	178/100	0.00	000.0	Primary
ChartGPs - ENC US5MA11M	Danger 11	2.26	069.8	Secondary (grouped)
h11737/3002sss500k/2007-163/sonar_data070612122300	0011	14.26	258.8	Secondary

### Hydrographer Recommendations

The hydrographer recommends the object be updated to reflect current bathy data.

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

32ft (13272\_1, 13270\_1, 13267\_1)

5 ¼fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

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

**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914  
 SORIND - US,US,Nsurf,H11737  
 TECSOU - 3:found by multi-beam

VALSOU - 9.880 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur. Chart 32-ft. rock at the current surveyed location.

### Feature Images

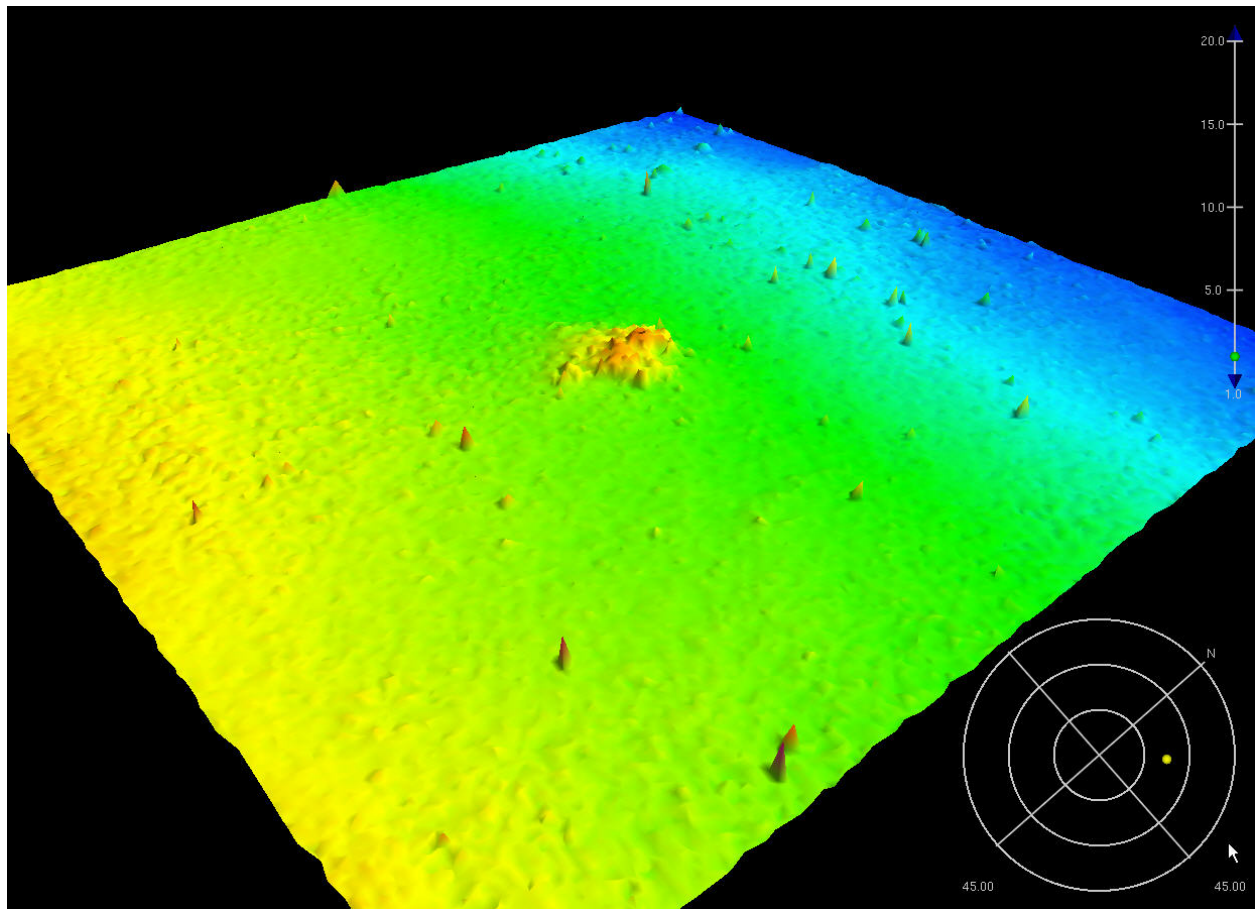
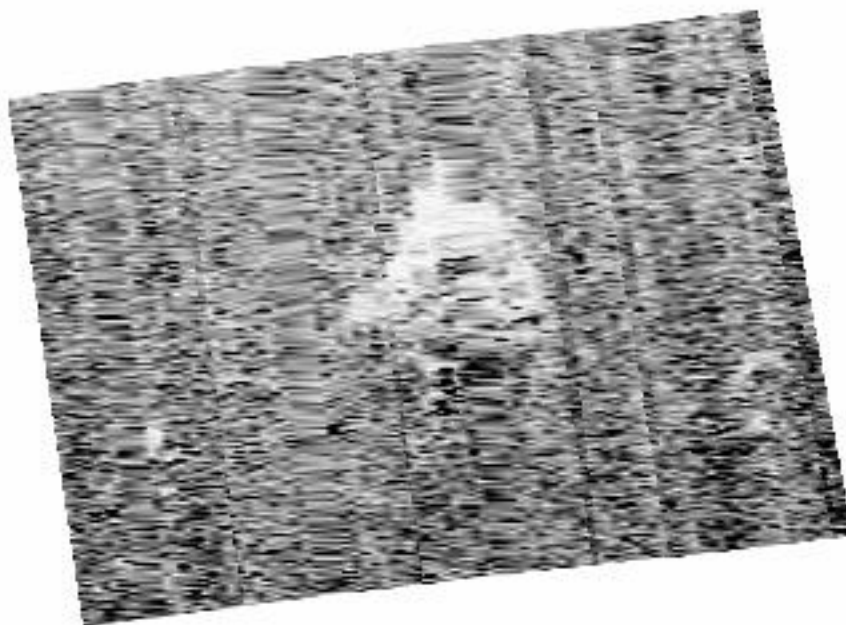


Figure 1.8.1



*Figure 1.8.2*

**1.9) Y N "E"****Survey Summary**

**Survey Position:** 42° 20' 11.9" N, 070° 58' 47.8" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2008-214.05:20:44 (08/01/2008)  
**Survey Line:** h11737 / 3002sss500k / 2007-166 / sonar\_data070615161400  
**Contact/Point:** 0001/1  
**Charts Affected:** 13272\_1, 13270\_1, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

**Remarks:**

Y N "E"

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11737/3002sss500k/2007-166/sonar_data070615161400	0001	0.00	000.0	Primary
ChartGPs - ENC US5MA11M	AToN 36	36.84	222.9	Secondary (grouped)

**Hydrographer Recommendations**

[None]

**S-57 Data**

**Geo object 1:** Buoy, special purpose/general (BOYSPP)  
**Attributes:** BOYSHP - 1:conical (nun, ogival)  
 CATSPM - 40:anchorage mark  
 COLOUR - 6:yellow  
 SORDAT - 20070914  
 SORIND - US,US,Survy,H11737

**Office Notes**

Recommend to chart anchorage buoy at the current surveyed location. Defer final charting disposition to MCD.



## 1.10) charted sewer

### Survey Summary

**Survey Position:** 42° 20' 25.3" N, 070° 57' 08.6" W  
**Least Depth:** 3.10 m (= 10.17 ft = 1.696 fm = 1 fm 4.17 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.963$  m ; **TVU (TPEv)**  $\pm 0.187$  m  
**Timestamp:** 2007-194.16:31:03.260 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 058\_1630  
**Profile/Beam:** 432/114  
**Charts Affected:** 13272\_1, 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The contact is a charted sewer pipeline. The pipeline position is incorrectly charted.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/058_1630	432/114	0.00	000.0	Primary
h11737/3002sss500k/2007-166/sonar_data070615171000	0004	7.40	209.3	Secondary
h11737/3002sss500k/2007-166/sonar_data070615154900	0001	53.51	348.4	Secondary (grouped)
h11737/3002sss500k/2007-166/sonar_data070615173500	0010	59.36	145.6	Secondary (grouped)
h11737/3002sss500k/2007-166/sonar_data070615164500	0003	117.68	340.9	Secondary (grouped)
h11737/s3002_mbes/2007-194/064_1633	48/106	173.30	336.2	Secondary (grouped)

### Hydrographer Recommendations

The hydrographer recommends re-positioning charted sewer pipeline to surveyed location, and a representative sounding be added at the north end of the pipeline.

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

10ft (13272\_1, 13270\_1, 13274\_5, 13267\_1)

1  $\frac{3}{4}$ fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

**Geo object 1:** Pipeline, submarine/on land (PIPSOL)

**Attributes:** SORDAT - 20070914

SORIND - US,US,Nsurf,H11737

## Office Notes

Recommend to chart pipeline at current survey location. Chart current sounding data in common area.

### Feature Images

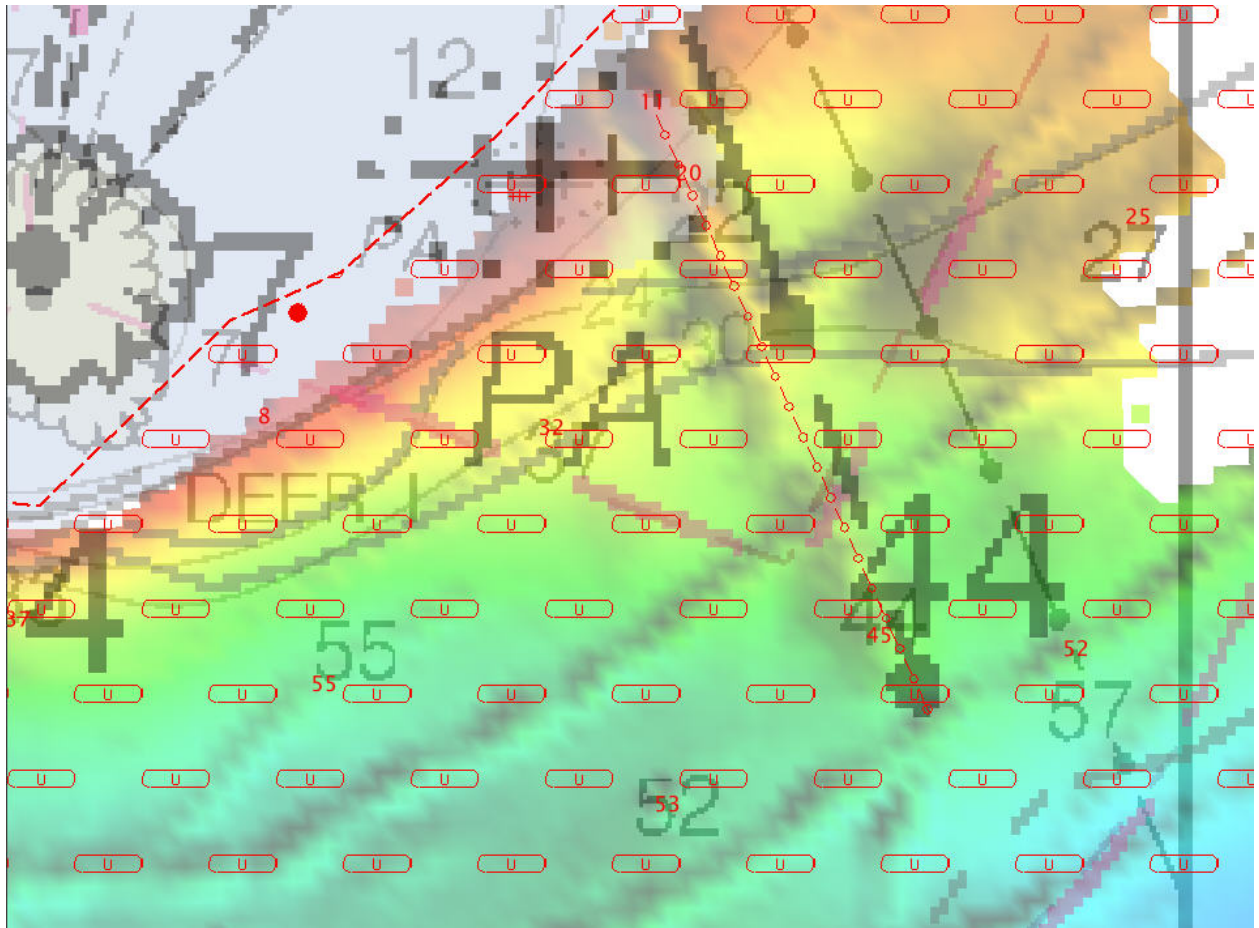


Figure 1.10.1

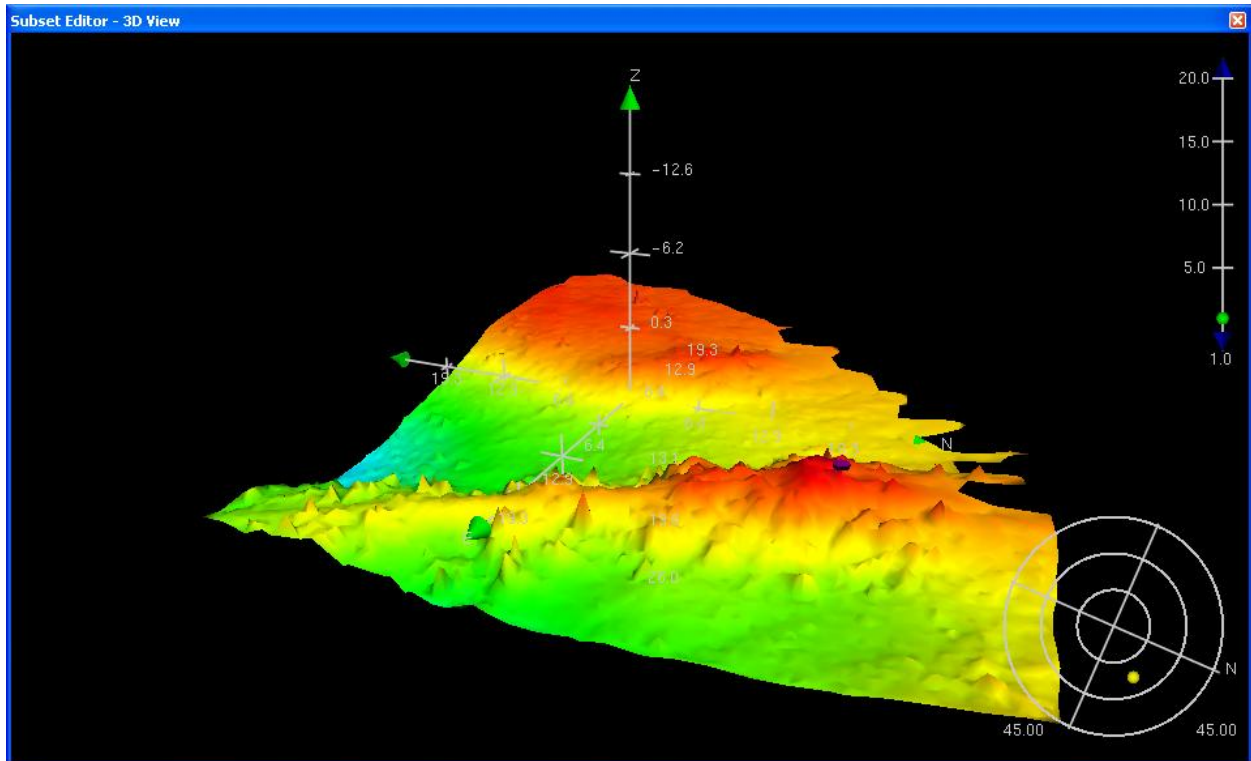


Figure 1.10.2

## 1.11) charted visible wreck PA

### Survey Summary

**Survey Position:** 42° 20' 14.4" N, 070° 59' 21.0" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** [None]  
**GP Dataset:** ChartGPs - ENC US5MA11M  
**GP No.:** Danger 90  
**Charts Affected:** 13272\_1, 13270\_1, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

[None]

### Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - ENC US5MA11M	Danger 90	0.00	000.0	Primary

### Hydrographer Recommendations

[None]

### S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 5:wreck showing any portion of hull or superstructure  
 SORDAT - 20050426  
 SORIND - US,US,1stCGD,LNM 17/05  
 WATLEV - 2:always dry

### Office Notes

The charted visible wreck PA was not assigned for investigation nor addressed with survey H11737.

# H11737- Uncharted Items

**Registry Number:** H11737  
**State:** Massachusetts  
**Locality:** Boston Harbor  
**Sub-locality:** President Roads  
**Project Number:** OPR-A397-NRT5-07  
**Survey Dates:** 07/13/2007 - 07/28/2007

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13272	49th	10/01/2004	1:10,000 (13272_1)	USCG LNM: 04/29/2008 (04/29/2008) CHS NTM: None (02/29/2008) NGA NTM: None (05/03/2008)
13270	62nd	06/01/2006	1:25,000 (13270_1)	USCG LNM: 04/29/2008 (04/29/2008) CHS NTM: None (02/29/2008) NGA NTM: 07/08/2000 (05/03/2008)
13274	26th	04/01/2005	1:40,000 (13274_5)	[L]NTM: ?
13267	32nd	12/01/2004	1:80,000 (13267_1)	[L]NTM: ?
13260	39th	06/01/2003	1:378,838 (13260_1)	[L]NTM: ?
13200	34th	12/01/2005	1:400,000 (13200_1)	[L]NTM: ?
13009	32nd	07/01/2006	1:500,000 (13009_1)	[L]NTM: ?
13006	33rd	04/01/2006	1:675,000 (13006_1)	[L]NTM: ?
13003	48th	10/01/2004	1:1,200,000 (13003_1)	[L]NTM: ?

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

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	uncharted rock, uncertain depth	Rock	[None]	42° 19' 58.7" N	070° 56' 35.9" W	---
1.2	uncharted rock, uncertain depth	Rock	[None]	42° 20' 23.3" N	070° 57' 12.9" W	---
1.3	uncharted 15-ft Rk	Rock	4.52 m	42° 19' 55.9" N	070° 57' 25.2" W	---
1.4	uncharted OBSTN, President Roads	Obstruction	13.23 m	42° 20' 05.0" N	070° 57' 33.8" W	---
1.5	uncharted 20' Rock	Sounding	6.07 m	42° 19' 52.8" N	070° 57' 37.4" W	---
1.6	uncharted 9-ft rock	Rock	2.92 m	42° 19' 54.2" N	070° 57' 30.4" W	---

## **1 - DR\_UnCharted**

## 1.1) uncharted rock, uncertain depth

### Survey Summary

**Survey Position:** 42° 19' 58.7" N, 070° 56' 35.9" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2007-201.01:40:42 (07/20/2007)  
**Survey Line:** h11737 / 3002sss500k / 2007-163 / sonar\_data070612130500  
**Contact/Point:** 0002/1  
**Charts Affected:** 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The contact is a rock located in a rocky shoal area. MBES data was not gathered over the contact due to its proximity to the rocky shoal. The Side Scan Sonar contact for RK was calculated to rise above the seafloor 1.7m.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/3002sss500k/2007-163/sonar_data070612130500	0002	0.00	000.0	Primary
h11737/3002sss500k/2007-163/sonar_data070612131700	0016	2.26	185.0	Secondary

### Hydrographer Recommendations

The hydrographer recommends the object be charted as a Rk.

### S-57 Data

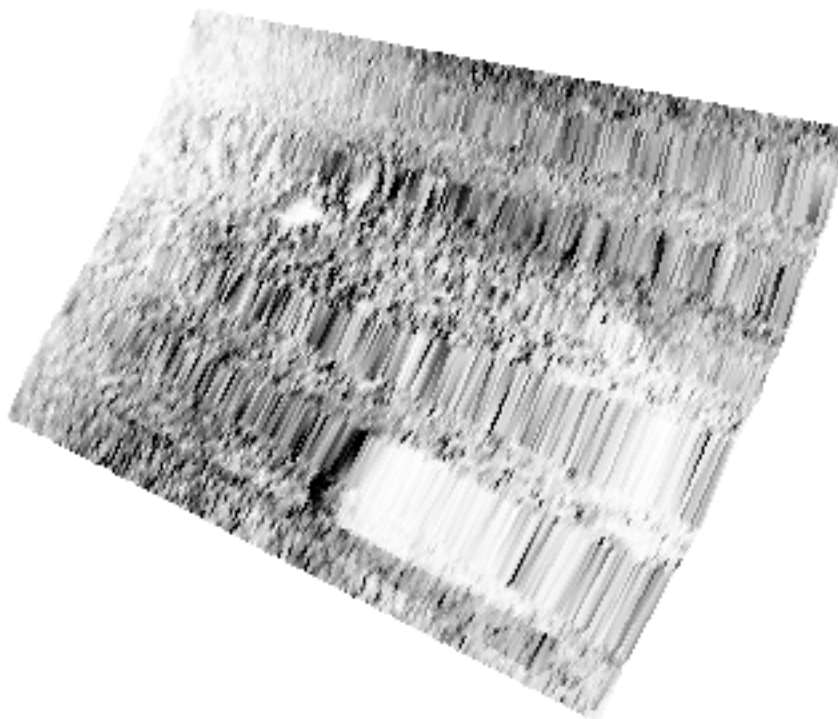
**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 9:value reported (not confirmed)  
 SORDAT - 20070914  
 SORIND - US,US,survey,H11737  
 TECSOU - 2:found by side scan sonar  
 VERDAT - 12:Mean lower low water  
 WATLEV - 3:always under water/submerged



## Office Notes

Concur. Chart a dangerous underwater rock of unknown depth.

## Feature Images



*Figure 1.1.1*

## 1.2) uncharted rock, uncertain depth

### Survey Summary

**Survey Position:** 42° 20' 23.3" N, 070° 57' 12.9" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2007-209.10:16:19 (07/28/2007)  
**Survey Line:** h11737 / 3002sss500k / 2007-166 / sonar\_data070615173500  
**Contact/Point:** 0007/1  
**Charts Affected:** 13272\_1, 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

Contact is a rock near a charted land area. Bathy data was not gathered due to the contact's proximity to the land area. Side Scan Sonar contact height above the sea floor is 1.72m. No bathy data acquired.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/3002sss500k/2007-166/sonar_data070615173500	0007	0.00	000.0	Primary

### Hydrographer Recommendations

The hydrographer recommends the object be charted as a rock.

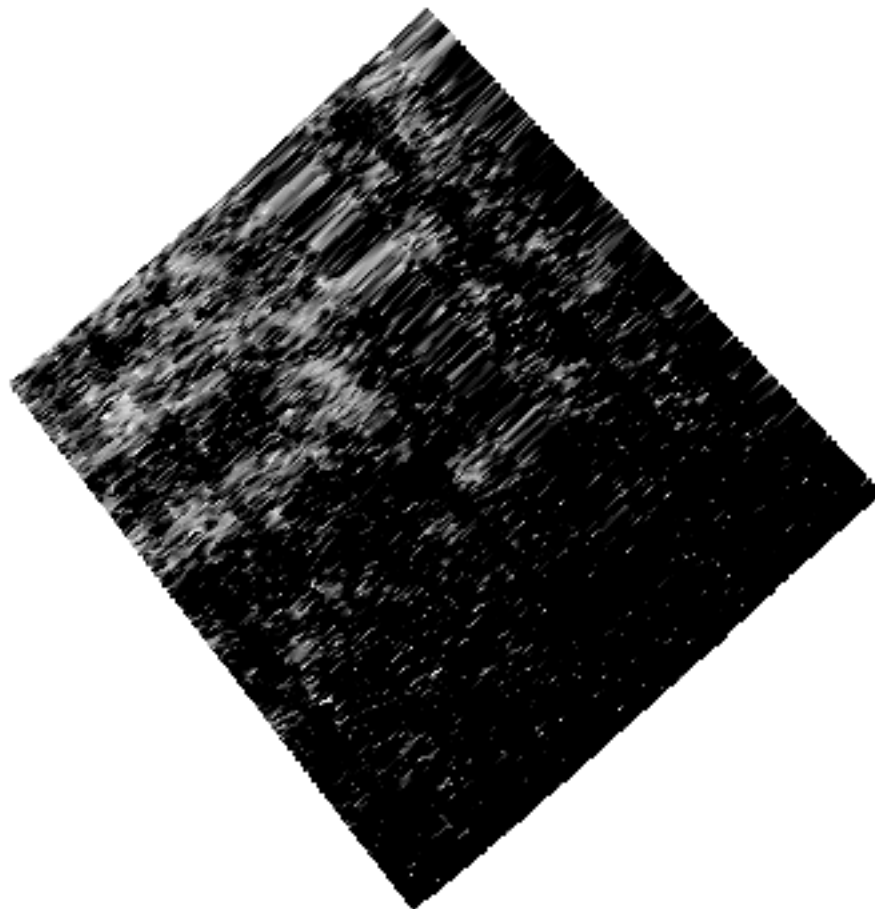
### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 9:value reported (not confirmed)  
 SORDAT - 20070914  
 SORIND - US,US,Survy, H11737  
 WATLEV - 3:always under water/submerged

### Office Notes

Concur with clarification. Chart a dangerous underwater rock of unknown depth at the surveyed location.

## Feature Images



*Figure 1.2.1*

### 1.3) uncharted 15-ft Rk

#### Survey Summary

**Survey Position:** 42° 19' 55.9" N, 070° 57' 25.2" W  
**Least Depth:** 4.52 m (= 14.82 ft = 2.470 fm = 2 fm 2.82 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.964$  m ; **TVU (TPEv)**  $\pm 0.188$  m  
**Timestamp:** 2007-194.15:16:18.502 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 099\_1514  
**Profile/Beam:** 1023/108  
**Charts Affected:** 13272\_1, 13270\_1, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The object is a rock.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/099_1514	1023/108	0.00	000.0	Primary
h11737/3002sss500k/2007-163/sonar_data070612131700	0002	11.20	087.3	Secondary (grouped)
h11737/3002sss500k/2007-163/sonar_data070612122300	0005	12.62	264.1	Secondary (grouped)
h11737/3002sss500k/2007-163/sonar_data070612134800	0003	13.25	249.2	Secondary (grouped)

#### Hydrographer Recommendations

The hydrographer recommends charting the object as a rock, LD and position as surveyed. -bsh

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

15ft (13272\_1, 13270\_1, 13267\_1)

2 ½fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

#### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914  
 SORIND - US,US,Nsurf,H11737

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

VALSOU - 4.518 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur.

### Feature Images

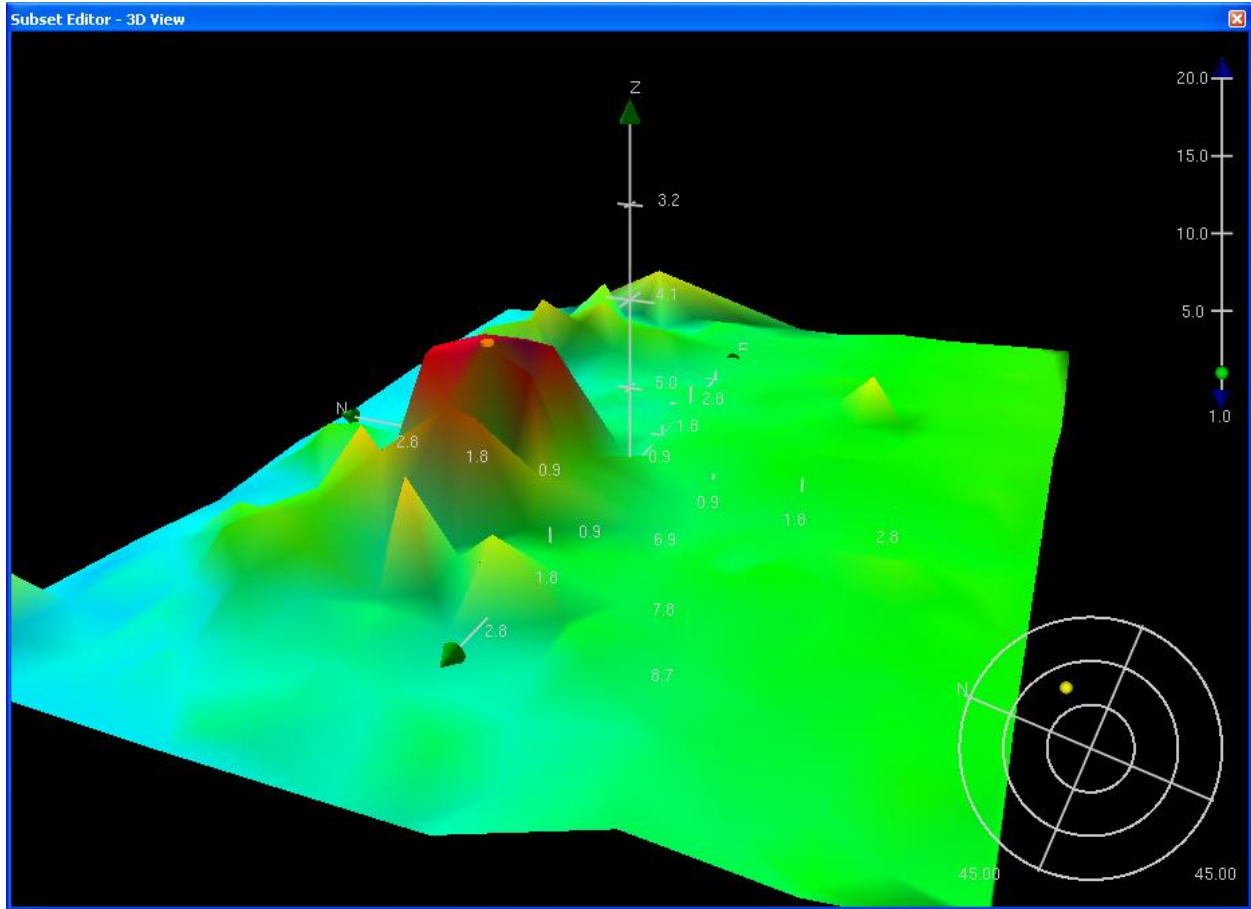
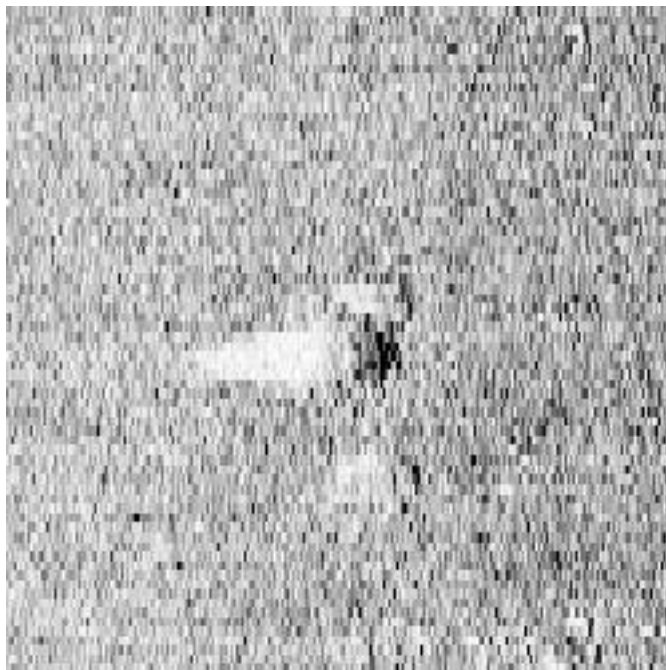


Figure 1.3.1



*Figure 1.3.2*



## 1.4) uncharted OBSTN, President Roads

### Survey Summary

**Survey Position:** 42° 20' 05.0" N, 070° 57' 33.8" W  
**Least Depth:** 13.23 m (= 43.40 ft = 7.234 fm = 7 fm 1.40 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.969$  m ; **TVU (TPEv)**  $\pm 0.201$  m  
**Timestamp:** 2007-194.15:46:24.486 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 078\_1546  
**Profile/Beam:** 139/50  
**Charts Affected:** 13272\_1, 13270\_1, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The object is an OBSTN, LD in agreement with charted soundings.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/078_1546	139/50	0.00	000.0	Primary
h11737/3002sss500k/2007-163/sonar_data070612154800	0005	2.25	323.2	Secondary
h11737/3002sss500k/2007-163/sonar_data070612154800	0001	13.78	254.6	Secondary (grouped)
h11737/3002sss500k/2007-163/sonar_data070612161700	0004	16.08	084.0	Secondary (grouped)

### Hydrographer Recommendations

The hydrographer recommends the object be charted as an OBSTN with LD and position as surveyed.

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

43ft (13272\_1, 13270\_1, 13267\_1)

7 ¼fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914  
 SORIND - US,US,Nsurf,H11737

TECSOU - 2:found by side scan sonar

VALSOU - 13.229 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur.

### Feature Images

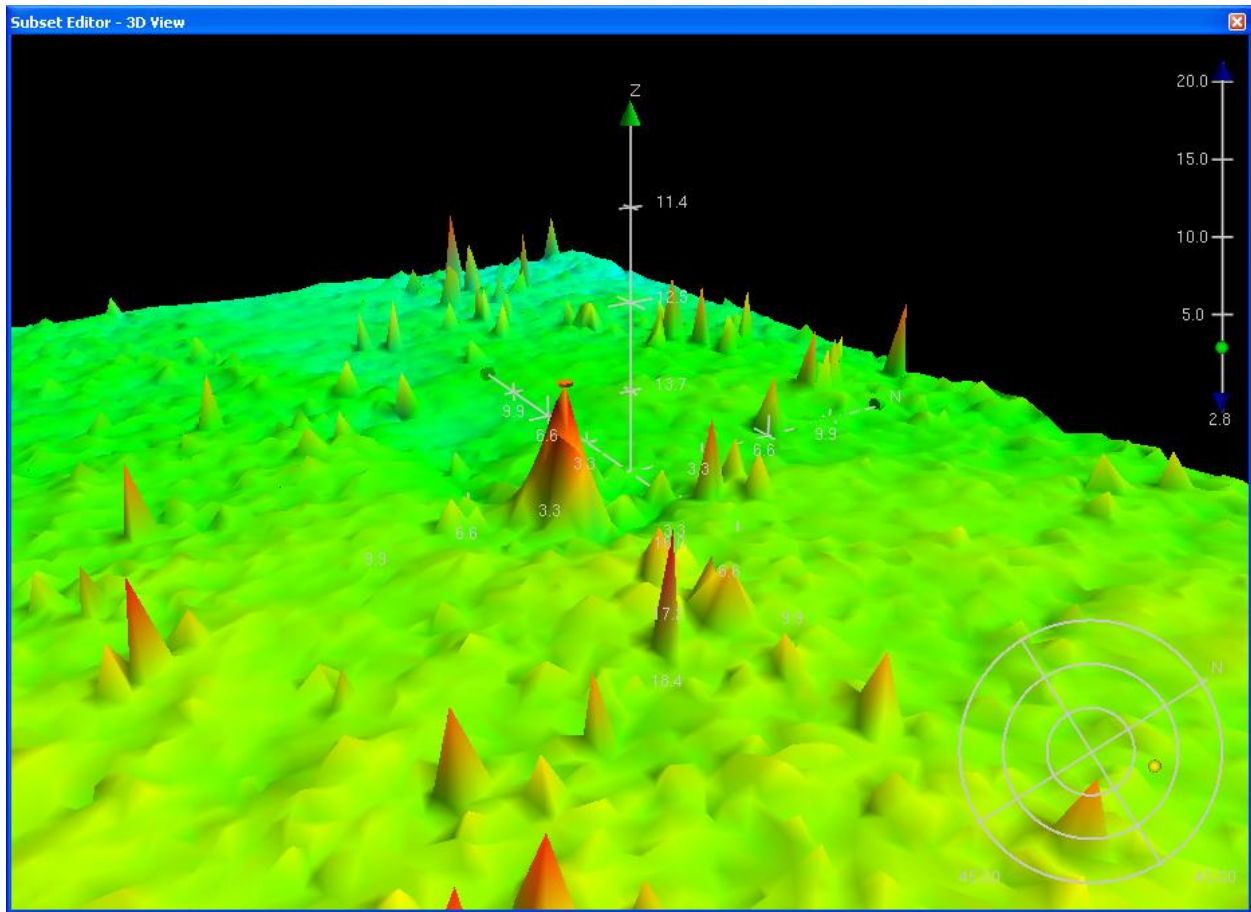
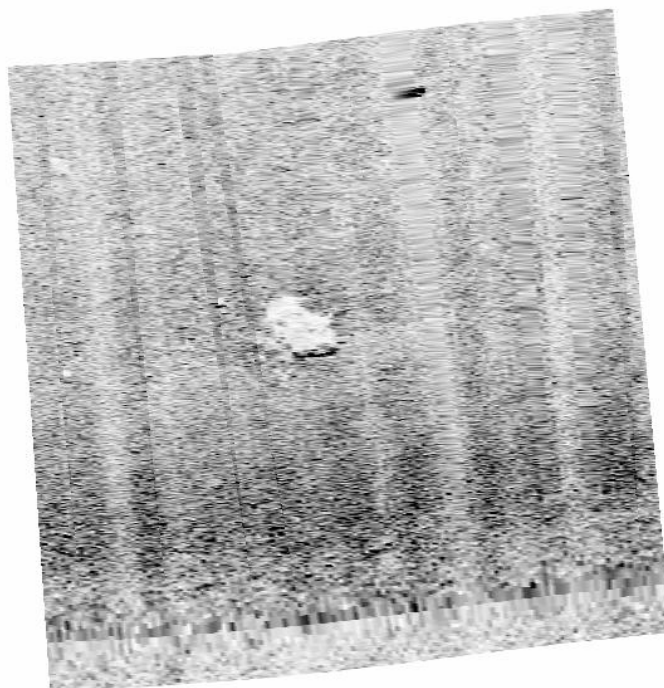


Figure 1.4.1



*Figure 1.4.2*

## 1.5) uncharted 20' Rock

### Survey Summary

**Survey Position:** 42° 19' 52.8" N, 070° 57' 37.4" W  
**Least Depth:** 6.07 m (= 19.93 ft = 3.321 fm = 3 fm 1.93 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.965$  m ; **TVU (TPEv)**  $\pm 0.191$  m  
**Timestamp:** 2007-194.15:28:37.761 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 095\_1528  
**Profile/Beam:** 205/27  
**Charts Affected:** 13272\_1, 13270\_1, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

The are was covered with 200% Klein 3000 SSS, and 100% Simrad EM3000 MBES, final tides applied. The object is a rock, LD in agreement with charted soundings.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/095_1528	205/27	0.00	000.0	Primary
h11737/3002sss500k/2007-163/sonar_data070612131700	0007	11.55	037.8	Secondary
h11737/3002sss500k/2007-163/sonar_data070612122300	0001	18.97	269.3	Secondary

### Hydrographer Recommendations

The hydrographer recommends the object be charted as a rock.

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

20ft (13272\_1, 13270\_1, 13267\_1)

3 ¼fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914  
 SORIND - US,US,Nsurf,H11737  
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 6.074 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

## Office Notes

Concur.

### Feature Images

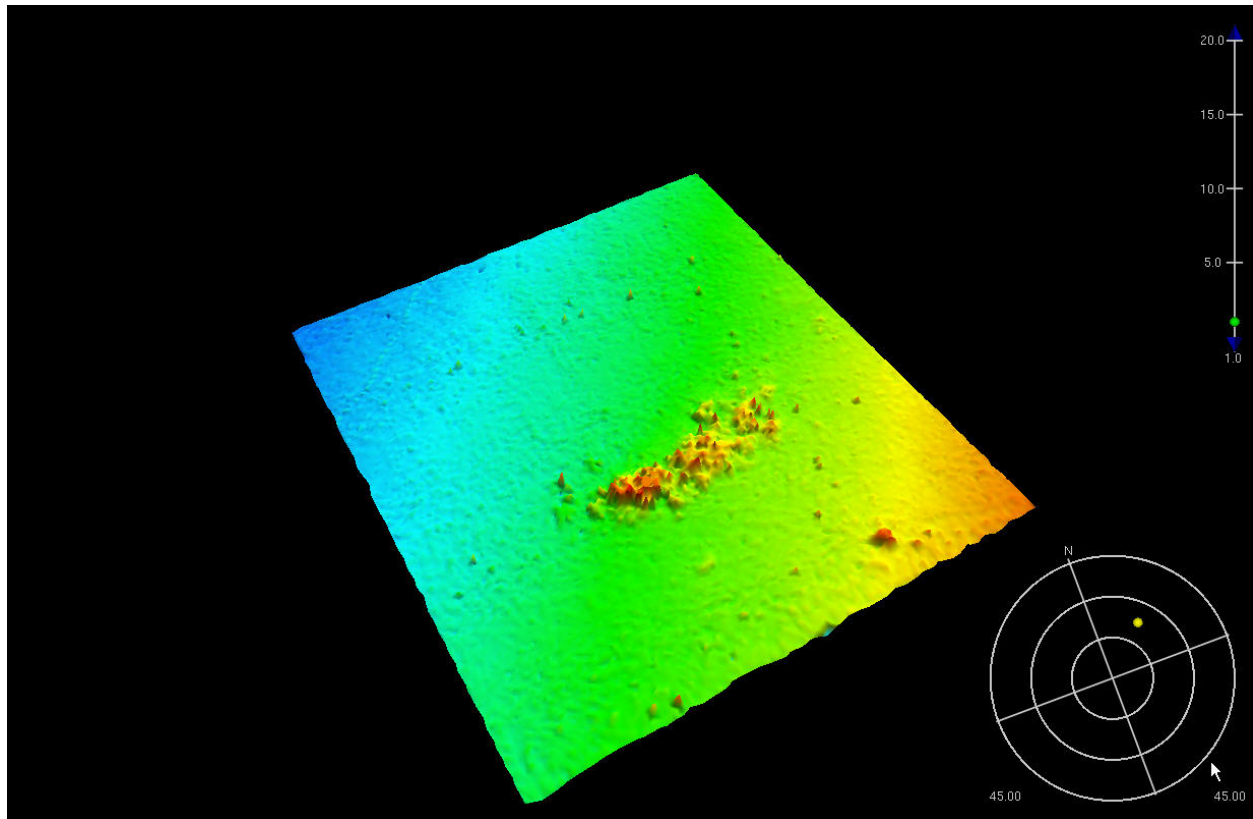


Figure 1.5.1



*Figure 1.5.2*



## 1.6) uncharted 9-ft rock

### Survey Summary

**Survey Position:** 42° 19' 54.2" N, 070° 57' 30.4" W  
**Least Depth:** 2.92 m (= 9.57 ft = 1.595 fm = 1 fm 3.57 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.962$  m ; **TVU (TPEv)**  $\pm 0.185$  m  
**Timestamp:** 2007-194.15:25:56.316 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 096\_1524  
**Profile/Beam:** 1494/70  
**Charts Affected:** 13272\_1, 13270\_1, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

[None]

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/096_1524	1494/70	0.00	000.0	Primary
h11737/3002sss500k/2007-163/sonar_data070612122300	0026	2.20	107.7	Secondary

### Hydrographer Recommendations

[None]

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

9ft (13272\_1, 13270\_1, 13267\_1)

1 ½fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

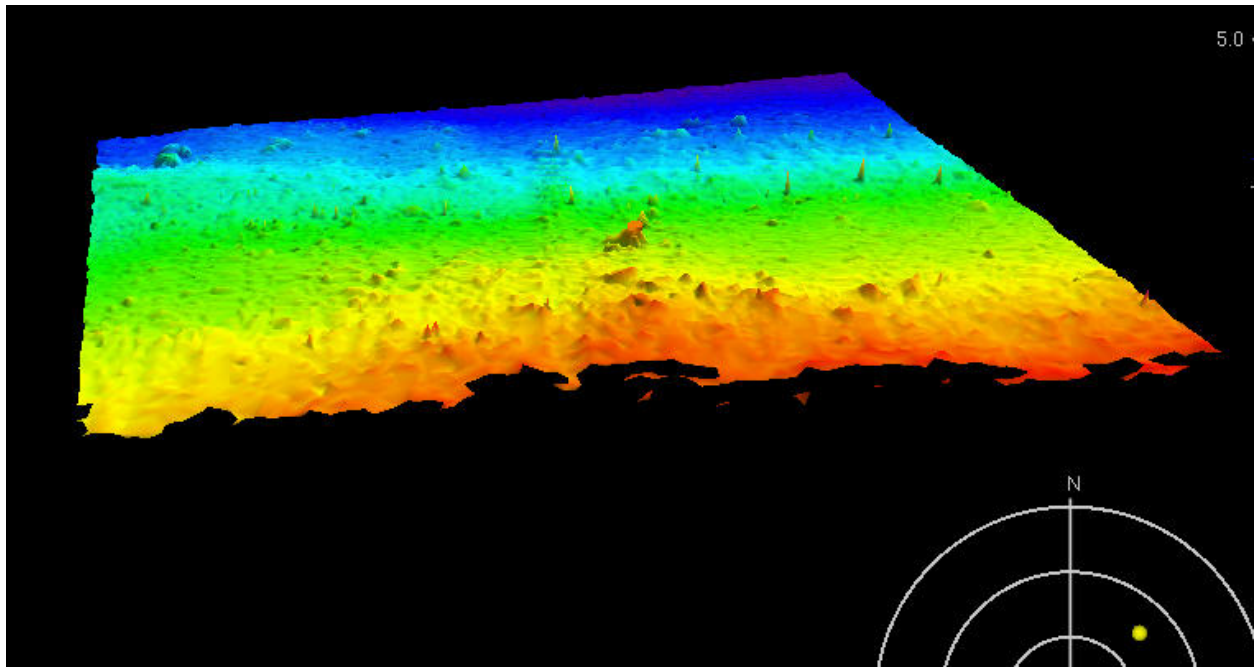
### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 6:least depth known  
 SORDAT - 20070914  
 SORIND - US,US,Nsurf,H11737  
 TECSOU - 3:found by multi-beam  
 VALSOU - 2.917 m  
 WATLEV - 3:always under water/submerged

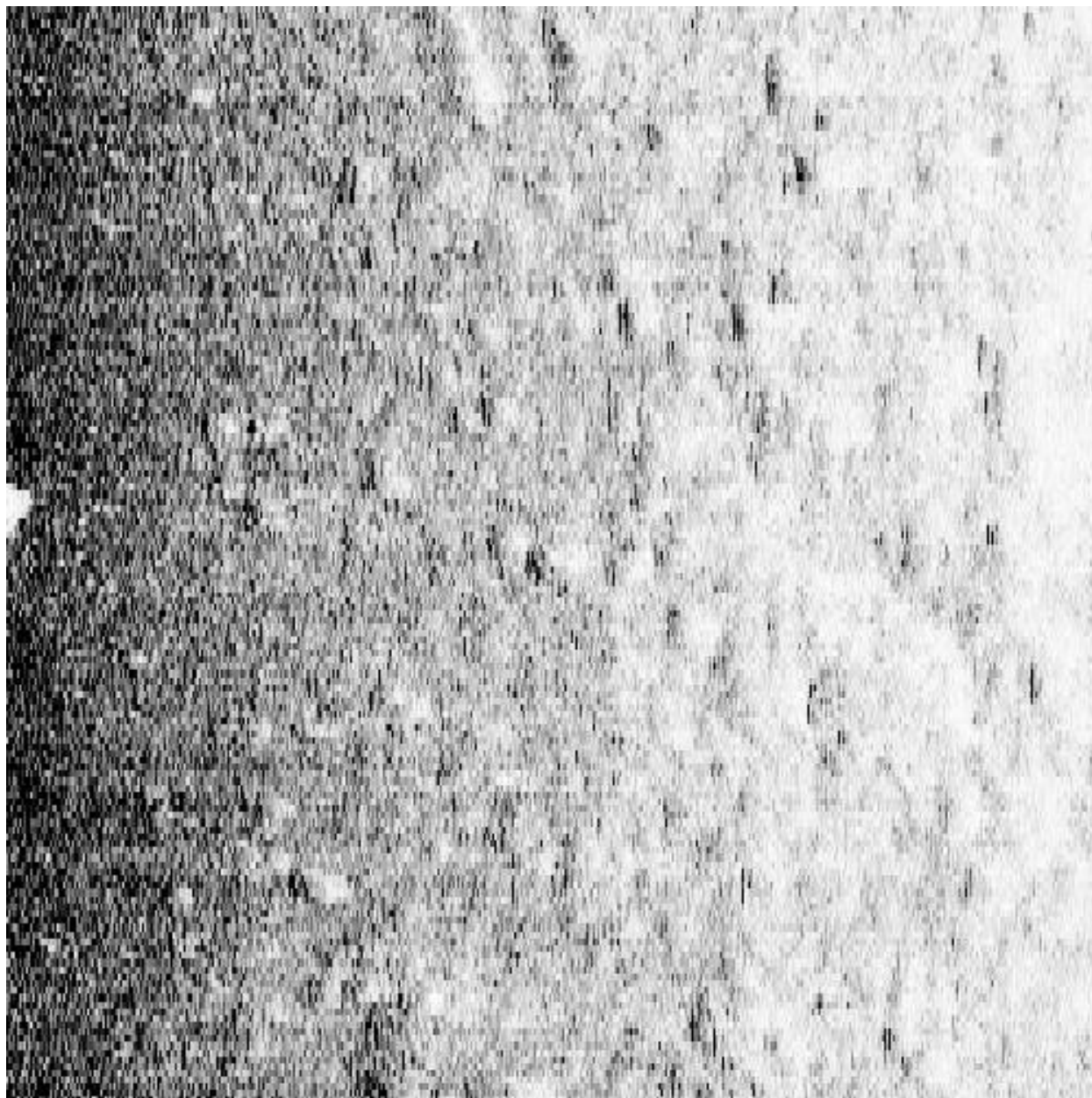
## Office Notes

Recommend chart dangerous rock, least depth 9-ft (2.917m) at the surveyed location.

## Feature Images



*Figure 1.6.1*



*Figure 1.6.2*

# H11737-AWOIS Items

**Registry Number:** H11737  
**State:** Massachusetts  
**Locality:** Boston Harbor  
**Sub-locality:** President Roads  
**Project Number:** OPR-A397-NRT5-07  
**Survey Date:** 07/13/2007

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13272	49th	10/01/2004	1:10,000 (13272_1)	USCG LNM: 04/29/2008 (04/29/2008) CHS NTM: None (02/29/2008) NGA NTM: None (05/03/2008)
13270	62nd	06/01/2006	1:25,000 (13270_1)	USCG LNM: 04/29/2008 (04/29/2008) CHS NTM: None (02/29/2008) NGA NTM: 07/08/2000 (05/03/2008)
13274	26th	04/01/2005	1:40,000 (13274_5)	[L]NTM: ?
13267	32nd	12/01/2004	1:80,000 (13267_1)	[L]NTM: ?
13260	39th	06/01/2003	1:378,838 (13260_1)	[L]NTM: ?
13200	34th	12/01/2005	1:400,000 (13200_1)	[L]NTM: ?
13009	32nd	07/01/2006	1:500,000 (13009_1)	[L]NTM: ?
13006	33rd	04/01/2006	1:675,000 (13006_1)	[L]NTM: ?
13003	48th	10/01/2004	1:1,200,000 (13003_1)	[L]NTM: ?

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

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	SIDEWINDER AWOIS 10195	AWOIS	[no data]	[no data]	[no data]	---
1.2	charted 61-ft Obstrn AWOIS 11746	Sounding	19.27 m	42° 20' 30.3" N	070° 55' 52.7" W	11746

**1 - DR\_AWOIS**

**1.1) AWOIS #10195 - SEWINDER AWOIS 10195**

**No Primary Survey Feature for this AWOIS Item**

**Search Position:** 42° 20' 24.3" N, 070° 57' 10.2" W  
**Historical Depth:** [None]  
**Search Radius:** 100  
**Search Technique:** S2, MB, DI  
**Technique Notes:** [None]

**History Notes:**

LNM33/1984(8/14/84)--1 ST CGD; SEWINDER, 33 FT LONG SAILING VESSEL PARTIALLY SUNK IN 20 FT OF WATER (PA). POSITION GIVEN IN LAT 42/20/24.0N, LONG 70/57/12.0W (NAD27). (ENTERED 3/1999 RWD)■ H10991/00-- OPR-A397-WH; ENTIRE SEARCH RADIUS NOT SEARCHED. HOWEVER, NO INDICATION OF VISIBLE WRECK WAS SEEN. EVALUATOR RECOMMENDS REVISING CHARTED VISIBLE WRECK TO A DANGEROUS SUNKEN WRECK, PA. (1/8/03, SJV)

**Survey Summary**

**Charts Affected:** 13272\_1, 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

**Remarks:**

Navigable area covered with 100% Klein 3000 SSS and 100% Simrad EM3000 MBES, final tides applied. No visually conspicuous wreck noted in the area. Contact noted in SSS trace within OBSTN circle does not match the description of AWOIS 10195. Bathy data was not acquired over the contact.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
AWOIS	AWOIS # 10195	0.00	000.0	Primary
ChartGPs - ENC US5MA11M	Danger 91	4.26	221.3	Secondary (grouped)
h11737/3002sss500k/2007-166/sonar_data070615173500	0006	13.61	174.9	Secondary

**Hydrographer Recommendations**

No charting recommendation.

**S-57 Data**

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 2:dangerous wreck

OBJNAM - AWOIS 10195 SIDEWINDER

QUASOU - 2:depth unknown

SORDAT - 20010310

SORIND - US,US,graph,chart 13272

WATLEV - 3:always under water/submerged

### **Office Notes**

Concur with clarification. No wreck observed in the SSS data; however, the area was not fully developed. Retain as charted and update AWOIS database.



## 1.2) charted 61-ft Obstn AWOIS 11746

### Primary Feature for AWOIS Item #11746

**Search Position:** 42° 20' 30.4" N, 070° 55' 52.9" W  
**Historical Depth:** 18.59 m  
**Search Radius:** 0  
**Search Technique:** [None]  
**Technique Notes:** [None]

#### History Notes:

HISTORY ■ H10991/00-- OPR-A397-WH; 200% SIDE SCAN SONAR OPS LOCATED UNCHARTED OBSTRUCTION. SWMB LD OF 61 FEET (18.59 METERS) IN LAT. 42-20-30.35N, LONG. 70-55-52.89W. EVALUATOR RECOMMENDS CHARTING A NON-DANGEROUS OBSTRUCTION (61 OBSTN) AS SURVEYED. (ENT 1/9/03, SJV)

### Survey Summary

**Survey Position:** 42° 20' 30.3" N, 070° 55' 52.7" W  
**Least Depth:** 19.27 m (= 63.21 ft = 10.535 fm = 10 fm 3.21 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.989$  m ; TVU (TPEv)  $\pm 0.320$  m  
**Timestamp:** 2007-194.13:12:56.865 (07/13/2007)  
**Survey Line:** h11737 / s3002\_mbes / 2007-194 / 013\_1310  
**Profile/Beam:** 980/118  
**Charts Affected:** 13270\_1, 13274\_5, 13267\_1, 13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1

#### Remarks:

AWOIS 11746 search area covered with 200% Klein 3000 SSS and 100% Simrad EM3000 MBES, final tides applied. Contact noted in the SSS trace, LD obtained with MBES. The contact appears to be a wreck.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11737/s3002_mbes/2007-194/013_1310	980/118	0.00	000.0	Primary
h11737/s3002_mbes/2007-194/015_1325	931/29	2.84	151.9	Secondary
ChartGPs - ENC US5MA12M	Danger 1	4.96	121.3	Secondary (grouped)
AWOIS	AWOIS # 11746	4.96	121.3	Secondary (grouped)
h11737/s3002_mbes/2007-194/014_1317	1619/40	5.10	205.3	Secondary
h11737/3002sss500k/2007-163/sonar_data070612122300	0004	19.66	270.1	Secondary

h11737/3002sss500k/2007-163/sonar_data070612134800	0001	22.78	272.8	Secondary
h11737/s3002_mbes/2007-194/014_1317	1605/108	23.87	337.5	Secondary
h11737/s3002_mbes/2007-194/014_1317	1601/109	24.16	341.1	Secondary

## Hydrographer Recommendations

The hydrographer recommends the object be charted as a non-dangerous wreck, LD and position as surveyed.

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

63ft (13270\_1, 13274\_5, 13267\_1)

10 ½fm (13260\_1, 13200\_1, 13009\_1, 13006\_1, 13003\_1)

## S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 2:dangerous wreck  
 QUASOU - 6:least depth known  
 SORDAT - 20070914  
 SORIND - US,US,Nsurf,H11737  
 TECSOU - 3:found by multi-beam  
 VALSOU - 19.267 m  
 WATLEV - 3:always under water/submerged

## Office Notes

Concur with clarification. Delete the charted dangerous obstruction, and chart the current feature as a dangerous wreck.

### Feature Images

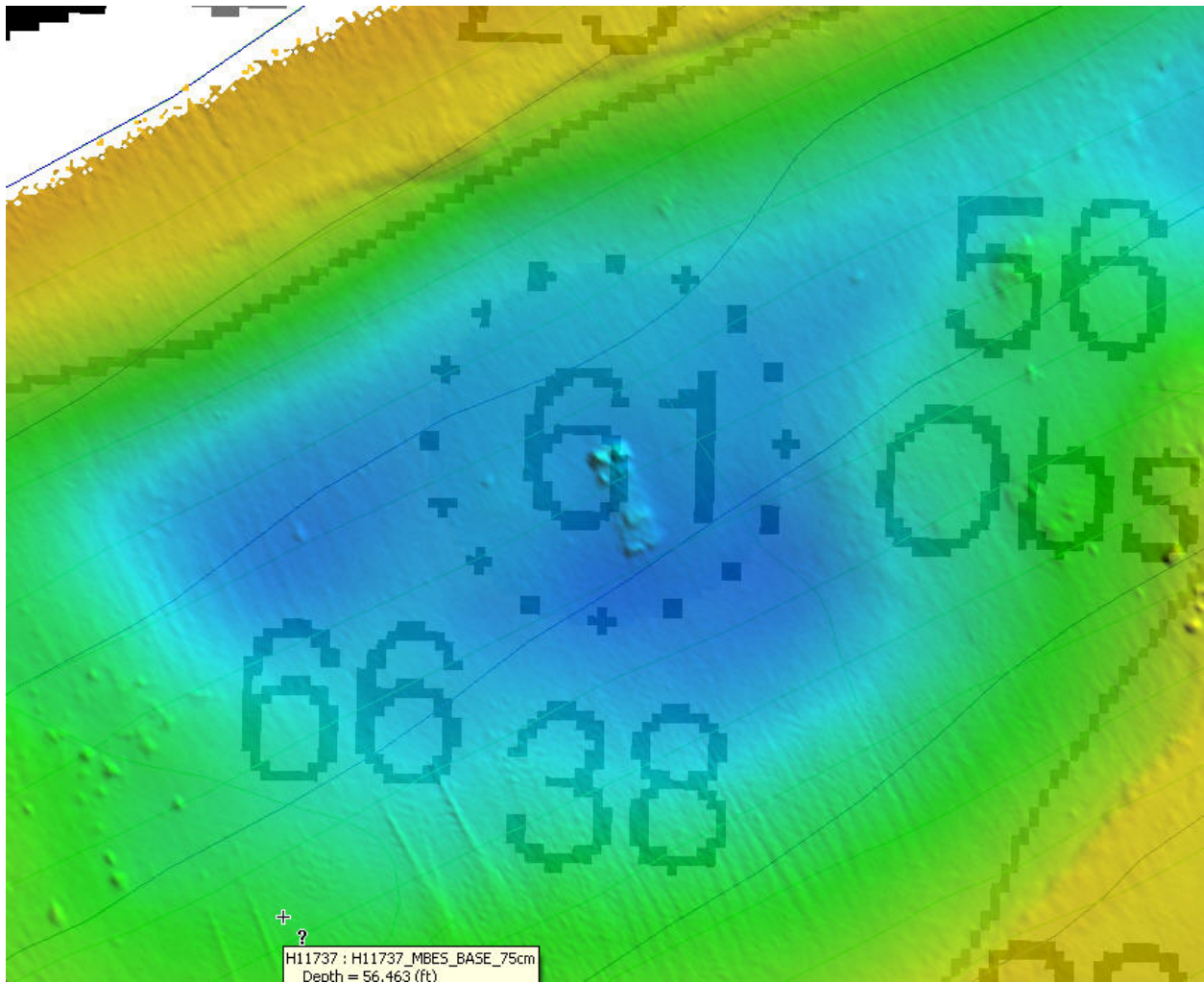
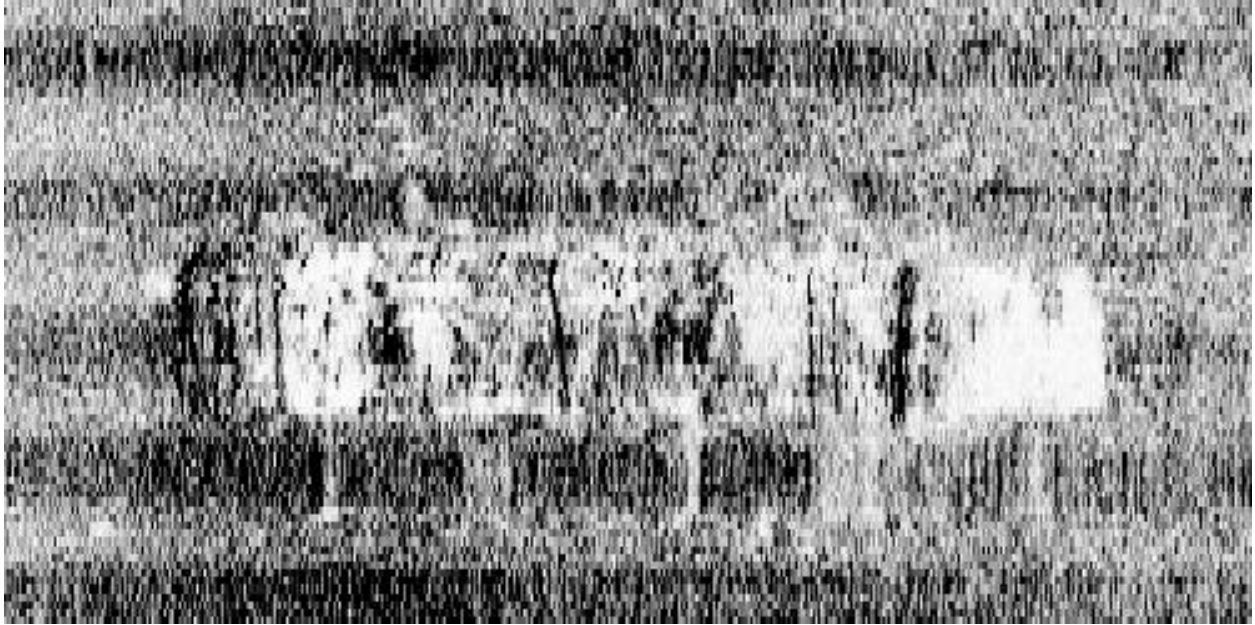


Figure 1.2.1



*Figure 1.2.2*



**APPENDIX IV**

**TIDES AND WATER LEVELS**



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NOAA NRT-5 (N/CS53x5)  
3 Chapel Ave, Port Liberte, c/o USACE  
Jersey City, NJ 07305

September 21, 2007

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

FROM: LTjg Matthew Jaskoski, NOAA NRT-5 (N/CS53x5)

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-A397-NRT5-07  
Registry No.: H11737  
State: Massachusetts  
Locality: Boston Harbor  
Sublocality: President Roads

Attachments containing:

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

cc: N/CS33



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Year_DOY	Min Time	Max Time
2007_163	11:24:35	18:47:20
2007_164	11:19:15	11:45:20
2007_165	11:18:13	16:56:11
2007_166	14:14:01	17:58:36
2007_180	04:42:00	04:49:00
2007_192	16:06:00	16:06:00
2007_193	21:09:00	21:09:00
2007_194	12:38:39	16:40:36
2007_197	13:04:09	17:24:00
2007_198	14:11:00	17:13:00
2007_199	15:58:00	15:58:00
2007_205	17:17:00	17:17:00
2007_207	12:40:00	13:18:00
2007_257	14:17:49	18:23:00





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



**BOSTON NORTH**  
 The project depths are part and 25 feet in the western depths see chart 13270

**LORAN-C GENERAL EXPLANATION**

LORAN-C FREQUENCY .....100KHz  
 PULSE REPETITION INTERVAL  
 9960 ..... 99,600 Microseconds  
 STATION TYPE DESIGNATORS: (Not individual station letter designators)  
 M ..... Master  
 W ..... Secondary  
 X ..... Secondary  
 Y ..... Secondary  
 Z ..... Secondary

STAND

BY THE NATIONAL

WHERE SHOWN SHOULD NOT BE USED

**BOS4**  
 Time Corrector 0 mins.  
 Range Corrector x1.00  
 Reference 844-3970

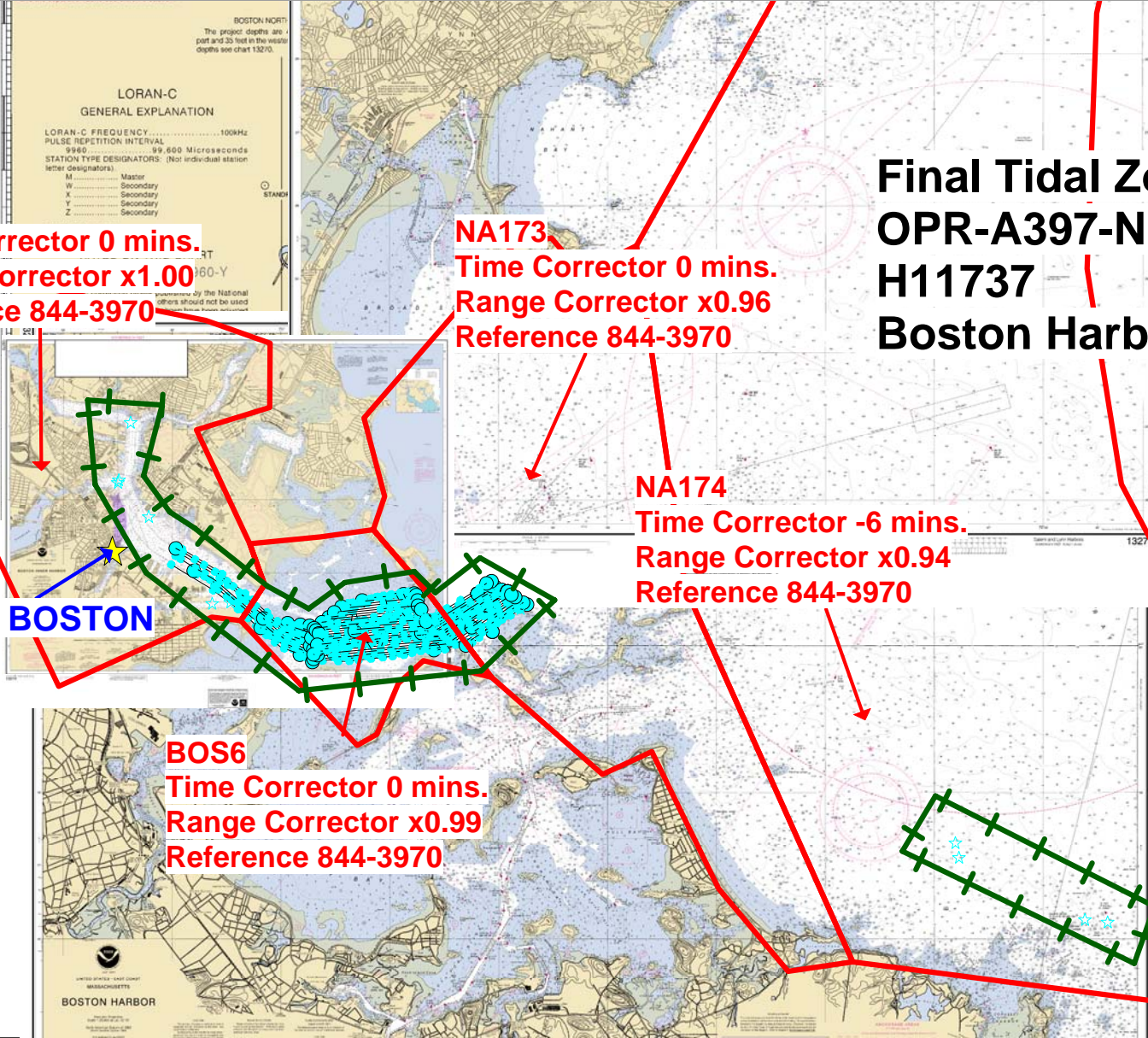
**NA173**  
 Time Corrector 0 mins.  
 Range Corrector x0.96  
 Reference 844-3970

**Final Tidal Zoning for  
 OPR-A397-NRT5-2007  
 H11737  
 Boston Harbor, MA**

**NA174**  
 Time Corrector -6 mins.  
 Range Corrector x0.94  
 Reference 844-3970

**844-3970 BOSTON**

**BOS6**  
 Time Corrector 0 mins.  
 Range Corrector x0.99  
 Reference 844-3970



**APPENDIX V**  
**SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCES**

**V.1. COAST PILOT REPORT, NOAA FORM 77-6**

No corrections or additions required.

**V.2. BOTTOM SAMPLE, NOAA FORM 75-44**

No bottom samples were taken.

**V.3. AIDS TO NAVIGATION, NOAA FORM 76-40**

All AToNs on the sheet were found to be agreement with their corresponding charted locations. No AToNs positioned during this survey were off station by greater than 50 meters. The hydrographer has no recommended changes to the charted AToN.

**ATLANTIC HYDROGRAPHIC BRANCH  
EVALUATION REPORT to ACCOMPANY  
SURVEY H11737 (2007)**

This Evaluation Report has been written to supplement 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:

HSTP PYDRO version 8.7 r2368-1  
CARIS HIPS/SIPS version 6.1 SP2 HF 1  
CARIS Base Manager version 2.1 SP1 HF 1-8  
DKART INSPECTOR, version 5.0, SP1  
CARIS S57 Composer version 2.0

**B.2. QUALITY CONTROL**

**H-Cell**

The survey-scale soundings were generated from two surfaces extracted from a 5-m combined surface composed of a 0.5-m MBES finalized grid and a 5-m extracted shoal VBES .bag. The extracted grids used to generate soundings were established according to the boundary of the largest scale chart (13272) to create soundings at appropriate densities for each scale. No product surface was generated. The selected sounding set density for the grid extracted at the scale of chart 13272 (1:10,000) was made using a single-defined radius on the ground of 10 m. The selected sounding set for the grid extracted at the scale of chart 13270 (1:25,000) was made using a single-defined radius on the ground of 20 m. 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.

**Finalized Source Grids**

**AHB\_H11737\_MBES\_p5m\_Final.hns**

**AHB\_H11737\_VBES\_5m\_EXTRACTED\_SHOAL.hns**

**BAG Grid**

**H11737\_VBES\_5M\_EXTRACT\_SHOAL.bag**

**Combined Grid**

**H11737\_AHB\_5m\_Combined.hns**

**Extracted Grids for Sounding Sets**

**H11737\_Extracted\_5m\_13270.hns**

**H11737\_Extracted\_5m\_13272.hns**

The pre-compilation products or components (Stand Alone HOB files (SAHOB)) are detailed in the Pre-Compile Process Log filed digitally in the AHB-Compile-Working-Reports directory of this survey. The SAHOB files include sounding selections (SOUNDG) at chart scale (H11737\_CS\_Soundings) and survey scale (H11737\_SS\_Soundings), features (OBSTRN, PIPSOL, SBDARE, UWTRC, WRECKS ), Meta Objects (M\_COVR, M\_QUAL, DEPARE, M\_CSCL), and cartographic Blue Notes (H11737\_BlueNotes). The individual SAHOB files H11737\_CS\_Soundings, H11737\_MetaObjects, H11737\_Features, and H11737\_BlueNotes were inserted into one BASE Manager feature layer (H11737\_HCell.hob) and exported to S57 format in order to create the H-Cell deliverable called H11737\_CS.000. All values are in metric units. H11737\_SS\_Soundings was exported to S57 format to create the H-Cell deliverable called H11737\_SS.000.

The completed H-Cell was exported as a Base Cell File (H11737\_CS.000 and H11737\_SS.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (US511737\_CS.000 and US511737\_SS.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 H11737 CARIS H-Cell final deliverables include the following products:

<b>US511737_CS.000</b>	<b>1:10,000 Scale</b>	<b>H11737 H-Cell with Chart Scale Selected Soundings, Features, and Meta Objects and Blue Notes</b>
<b>US511737_SS.000</b>	<b>1:5,000 Scale</b>	<b>H11737 Selected Soundings (Survey Scale)</b>

### **B.2.7. Junctions**

Comparison with contemporary survey H11736 shows agreement between sounding data within 1-2 feet.

Comparison was made with prior survey H10990. Soundings within common area agree within 1 -3 ft with soundings from survey H11737 except for the following:

At GP 42-09-58.692N, 070-59-53.135W H11737 sounding is 11 ft deeper.

At GP 42-20-38.170N, 070-58-23.921W H11737 sounding is 5 ft shoaler.

At GP 42-20-42.911N, 070-57-53.258W H11737 sounding is 6 ft shoaler.

Comparison was made with prior survey H10991. Soundings within the common area agree within 1 - 3 ft with soundings from survey H11737 except for the following:

At GP 42-20-28.825N, 070-55-57.886W H11737 sounding is 5 ft shoaler.

At GP 42-20-27.966N, 070-56-19.928W H11737 sounding is 4 ft deeper.

At GP 42-20-20.525N, 070-57-19.290W H11737 sounding is 4 ft deeper.

At GP 42-20-32.782N, 070-58-26.156W H11737 sounding is 6 ft deeper.

At GP 42-20-30.661N, 070-58.29.963W H11737 sounding is 4 ft deeper.

At GP 42-20-26.788N, 070-58-25.968W H11737 sounding is 4 ft deeper.

These locations are noted for MCD cartographer information only. AHB recommends revising chart with H11737 soundings in all common areas.

## D. RESULTS AND RECOMMENDATIONS

### D.1 CHART COMPARISON

13272 (49<sup>th</sup> Edition, 10/01/2004)  
Corrected through NM 05/13/2008  
Corrected through LNM 10/03/2006  
Scale 1:10,000

13270 (62<sup>nd</sup> Edition, 06/01/2006)  
Corrected through NM 05/03/2008  
Corrected through LNM 04/29/2008  
Scale 1:25,000

13276 (34<sup>th</sup> Edition, 05/01/2007)  
Corrected through NM 06/07/2008  
Corrected through LNM 06/03/2008  
Scale 1:80,000

### ENC Comparison

US5MA11M  
Boston Inner Harbor  
Edition 10  
Application Date 2008-05-29  
Issue Date 2008-05-29  
Chart 13272

US5MA12M  
Boston Harbor  
Edition 8  
Application Date 2007-10-12  
Issue Date 2008-08-08  
Chart 13270

#### D.1.1 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. The following exceptions are noted:

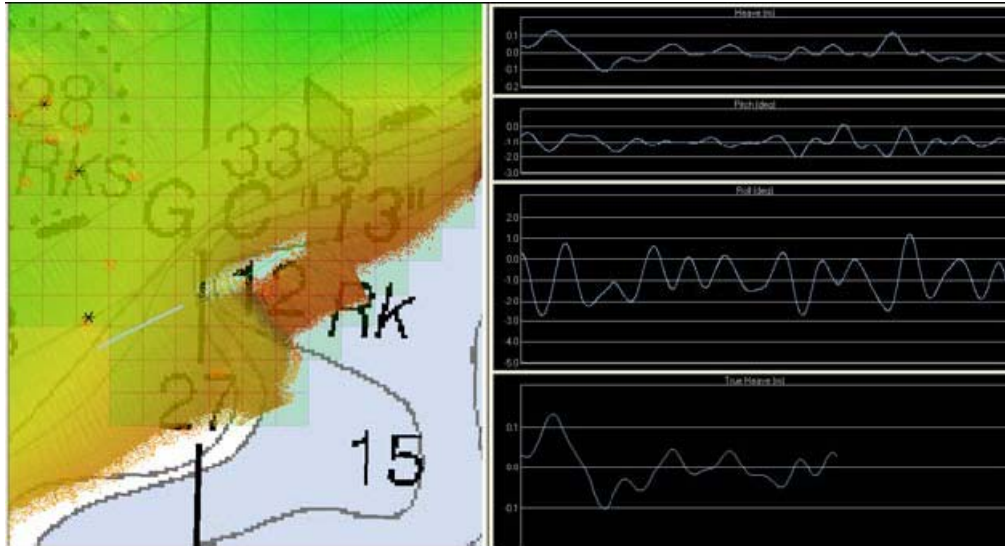
a. The field unit was directed to obtain bottom samples in the Letter of Instructions, but did not do so. Therefore all charted sea bed characteristic (SBDARE) objects were retained as charted. The spatial and feature attributes of the SBDARE point features were carried forward from an ENC (US5MA11M).



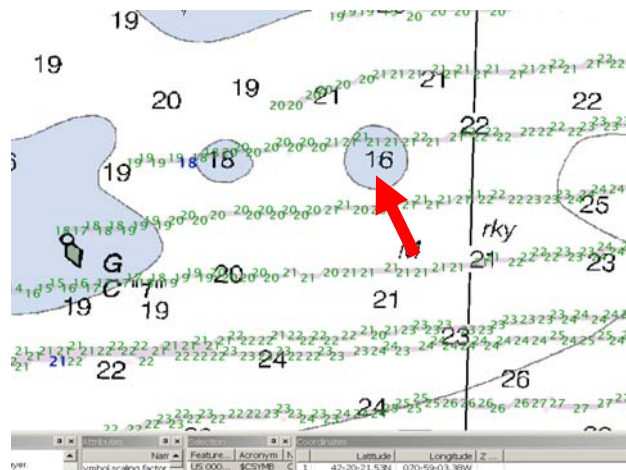
b. The field unit submitted 75cm grids when object detection requirements state the need for 50cm grids according to FPM guidelines. See ESAR, section 2.1.

c. Tow fish navigation was not recomputed but was applied during office processing. See ESAR, section 2.2.

d. The following holiday was in the MBES grid because of incomplete true heave data. The true heave for 2007-194/004\_1433 was deleted, and the “regular” real time heave was used instead. See ESAR, section 3.6.

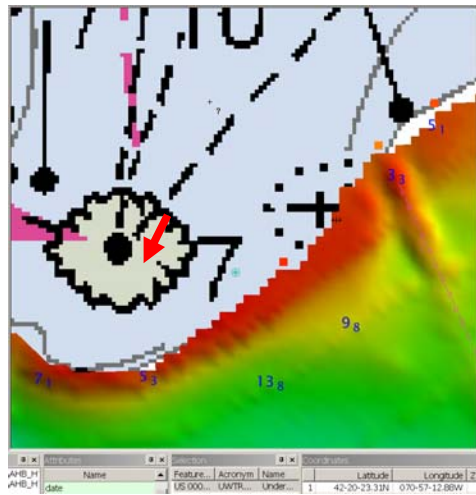


e. VBES did not adequately cover this 16ft shoal in the screen shot below. A Blue Note was added with the following INFORM comments: “Retain charted 16 ft sounding. Vertical beam data does not cross 16 foot sounding. Did not disprove 16 ft sounding. Evidence of shoal in side scan data but did not investigate.”

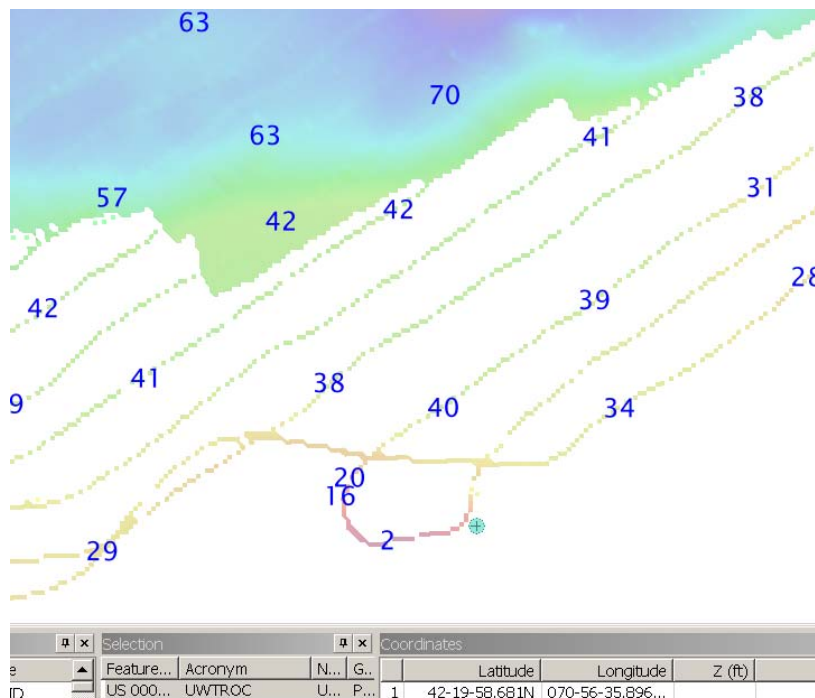




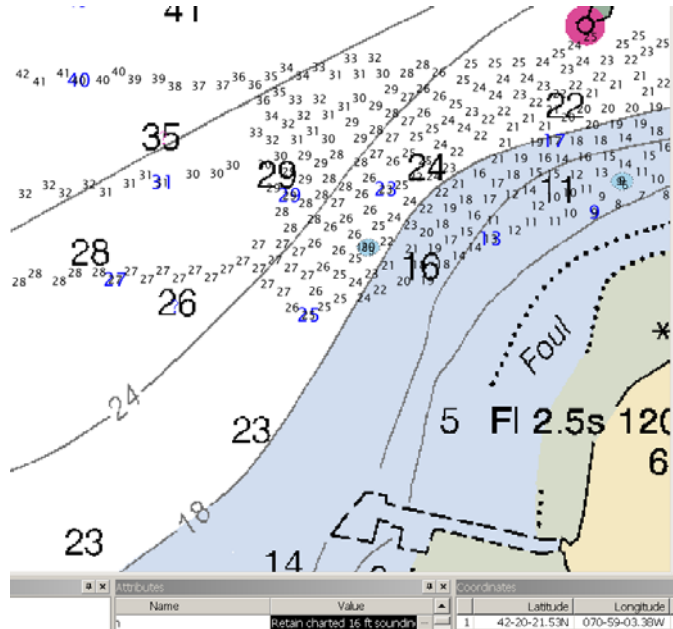
f. An UWTROC was found approximately 16m outside the survey limits. No bathymetry data was collected on it, but the field recommended charting a rock. Office notes in Pydro recommend charting a dangerous underwater rock of unknown depth. The GP is 42-20-23.307N, -070-57-12.877W. The M\_COVR and M\_QUAL layers were digitized to include this feature since it was recorded in the survey data. There is no VALSOU for this feature.



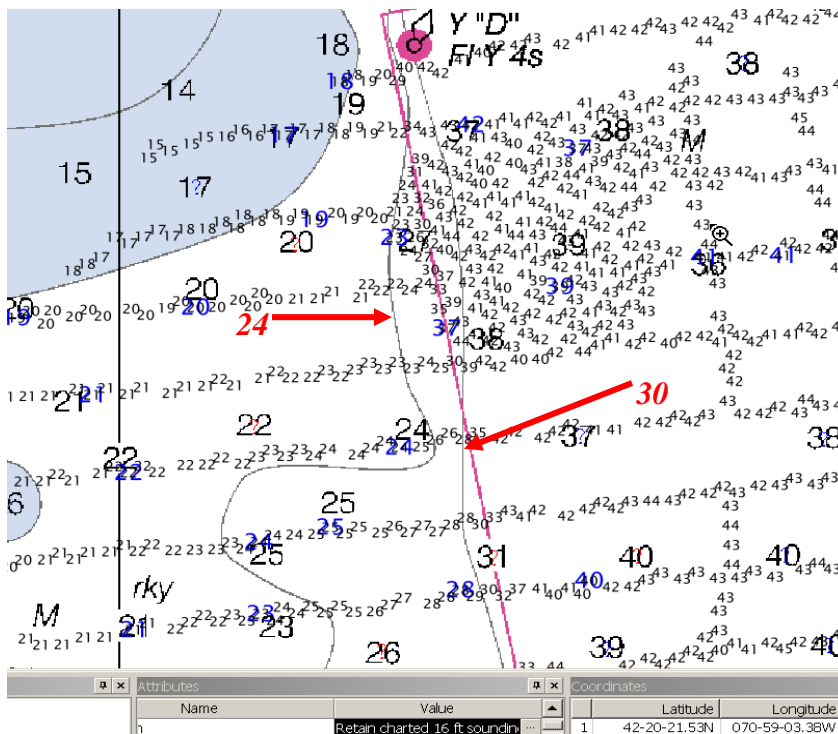
g. An UWTROC was found at GP 42-19-58.681N, 070-56-35.896W. Remarks in Pydro state, "The contact is a rock located in a rocky shoal area. MBES data was not gathered over the contact due to its proximity to the rocky shoal." It is recommended that a dangerous underwater rock of uncertain depth be charted in the surveyed location. There is no VALSOU for this feature.



h. Contours were not generated in Caris BASE Manager but a few hand-digitized contours were made to aid sounding selection. The AHB intern did compare the charted contour lines with current survey soundings. There are changes in the soundings produced from the current survey data compared to charted contours. However, some areas were only covered with VBES so current depths could not be compared adequately to charted contours in those places. The screen shot below shows one example on the south edge of the survey near Long Island where charted contours tend to be shoaler than soundings from the current survey.

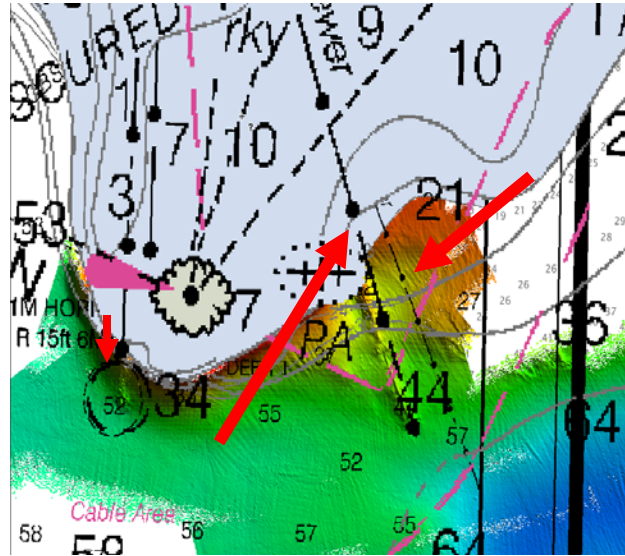


This screen shot shows another area to the southeast of Governor Flats where charted contours are both shoaler and deeper than soundings from the current survey.



### **D.2.3 Submarine Cables and Pipelines**

The sewer line outfall was found to be in the charted position. One sewer pipeline was found to be charted in the incorrect position on chart 13272 but charted in the correct position on chart 13270. This is documented in the Pre-compile Log which is appended to this document. Defer to MCD for final charting disposition.



### **D.4. 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.

**APPROVAL SHEET**  
**HXXXXX**

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation 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 National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

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Mary E. Litrico  
Hydrographer Intern,  
Atlantic Hydrographic Branch

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

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Castle Eugene Parker  
Physical Scientist,  
Atlantic Hydrographic Branch

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: \_\_\_\_\_  
CDR Shep Smith, NOAA  
Chief, Atlantic Hydrographic Branch